



INFINITE INTENSITY

THE REVOLUTION IS HERE

**What Every
Athlete Needs—**

The ultimate low-tech/
high-effect program
for maximum
speed, endurance,
and strength



Created By

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INTRODUCTION

"Forget past mistakes. Forget failures. Forget everything except what you're going to do now and do it." - William Durant

Confusing, expensive, and deceptive!

These words describe the state of today's fitness industry. Authors and product manufacturers continue to complicate the strength and conditioning business. We have all heard worn out phrases about six-pack abs, overnight miracles, and super human strength without sacrifice.

Fortunately, this book will be different from the norm, as it does not include false promises, ridiculous claims, and sugarcoated statements.

It amazes me how society continues to search for the easy road. Hard work and perspiration are avoided like the black plague. Can you imagine there are even products that claim to burn fat while you sleep?

This book will not mislead you with such nonsense. Instead, I will detail a proven system that will produce undeniable results. The work will be sweat drenched and difficult. The only uncertainty regarding these routines is whether you are willing to put forth the effort.

If you are looking for a quick fix, do yourself a favor and look elsewhere. If however you are different from the norm and eager for a challenge, you will find everything that you need for a lifetime of strength and fitness. You will not need expensive training contraptions. You will not need an overpriced personal trainer. You will not need a clandestine training certification.

Regardless of your training objectives, this book will prepare you for the road ahead. The routines in this guide will address all aspects of fitness.

Efficient, intense, and effective are three ways to describe this program. You will not need an entire day to perform these workouts. You will have time to live your life and conduct skill-based activities for your particular sport.

INFINITE INTENSITY PHILOSOPHY

"You cannot just tell people you're committed - You cannot just say you're dedicated - You cannot simply talk about your strength, your grit, your perseverance - You have to prove it..."
- Lance Armstrong

Infinite is defined as extending indefinitely. Intense means to be marked by or expressive of great zeal, energy, determination, or concentration. The expression of zeal, energy, determination, and concentration should extend indefinitely, hence the title for this book.

I am not suggesting that one push himself to the extreme each day. Such a regimen is a recipe for burnout. Rather, one must train (and live) with the goal of continuous improvement. There is no reason to accept anything but your best. This mindset should extend throughout your life.

Society is quick to place limits on our abilities. When speaking of athletic potential, we are bombarded by naysayers who harp on genetic limits. Rather than living life with infinite intensity, these individuals preach a system of infinite inadequacy. Youngsters are taught that it is acceptable to give up. This weak mindset has spread like wildfire. Many give up before they try. Challenges are approached with a mindset that says "Why bother, I am not good enough."

When an athlete defies the odds and overcomes adversity, he is heralded, not so much for his achievements, but for his ability to overcome obstacles that were previously considered impossible. Clearly, the ability to surge past once thought boundaries is considered unusual. If it were commonplace, there would be no reason to celebrate those individuals who rise to the occasion.

Mahatma Gandhi once said:

"Man often becomes what he believes himself to be. If I keep on saying to myself that I cannot do a certain thing, it is possible that I may end by really becoming incapable of doing it. On the contrary, if I have the belief that I can do it, I shall surely acquire the capacity to do it even if I may not have it at the beginning."

We must live life without the *try mentality*. In essence, the concept of *trying* was created to rationalize failure. Society preaches that it is acceptable to fail as long as you have tried.

Let's flush this mindset down the toilet. No one becomes great by living a life where failure is both accepted and expected. Those who achieve greatness refuse to accept failure. It is not an option.

Forget the critics. Critics run rampant in today's world. Those who achieve greatness do not. It is easier to put a ceiling on your success than it is to live a life with infinite intensity.

I will never live with the belief that I cannot achieve a goal. I will bust my ass to ensure success. I've been called crazy, but in my mind, it is crazy to waste your life away.

Perhaps a genetic ceiling does exist, but I'll never be satisfied living with this mentality. If a ceiling does exist, I'm ready to bust through it, creating a window filled with opportunity.

This refusal to accept limits is largely missing in today's sporting world. Athletes are much more capable than they realize. With a regular dose of hard work, consistency, and relentless perseverance, the ordinary can become extraordinary. You may not be able to grow taller, but you can become faster, stronger, more powerful, and more enduring. You can develop an indomitable mindset that refuses to quit.

The training program detailed throughout this guide is designed to push the envelope, both physically and mentally. We will develop an athlete who is strong and capable. We will refuse to accept limits, as we strive forward in search of greater accomplishments.

The training philosophy that fuels this book is well-rounded. We will emphasize functional strength, power, muscular endurance, anaerobic capacity, core strength, and more. This program will not develop unnecessary mass that will detract from performance.

This is not a bodybuilding program. Bodybuilding is the worst thing that ever happened to the strength and conditioning industry. I commend and respect the diligence and dedication needed to succeed in the sport of bodybuilding. I do however recognize the distinct difference between the training needs of a competitive bodybuilder and a competitive athlete.

To compare these two endeavors would be like comparing apples to oranges. A competitive athlete should not follow a bodybuilding program. Strength training is just one piece of the puzzle. A complete training program must address several objectives.

Bodybuilding emphasizes aesthetics. A bodybuilder trains with the goal of maximizing hypertrophy (muscle growth). There is no concern for athletic abilities such as speed, agility, and endurance.

Unfortunately, many novice trainers and trainees consider bodybuilding a synonym for athletic strength training. Consequently, bodybuilding routines are prescribed to competitive athletes by incompetent coaches. Other coaches avoid the weight room, fearing their athletes will develop muscle-bound physiques, similar to a bodybuilder.

One of the goals of this book is to destroy these misconceptions that taint today's strength and conditioning industry. A bodybuilding program is the last thing that a competitive athlete should follow. An athlete must always put function in front of form. Looks will not get you anywhere on the battlefield. A large muscle is useless if it lacks the ability to perform.

The late Dr. Mel Siff, world-renowned sports scientist, stated that "strength is not primarily a function of muscle size, but one of the appropriate muscles powerfully contracted by effective nervous stimulation" (2003a).

If you believe strength is dependent on size, I invite you to visit a weightlifting competition, followed by a bodybuilding contest. At the first event, you will witness competitive weightlifters hoisting tremendous loads at lightning speeds. These individuals are living proof that strength is not dependent on size. On average, bodybuilders do not have the strength of Olympic weightlifters. The bodybuilder may have larger muscles, but will rarely possess anywhere near the strength.

Furthermore, Olympic weightlifters commonly increase strength with no apparent changes in body mass. These athletes improve while remaining within specific weight classes. Therefore, it is clearly possible to increase strength, without unnecessary hypertrophy.

So, is this a book about Olympic weightlifting?

No, I am simply emphasizing that our search for strength should not include a relentless desire for muscle mass.

NOT A BODYBUILDING COURSE

This book is not intended for bodybuilders. This program is designed for competitive athletes who want to improve performance.

Before we begin, let's review some specific reasons to avoid the bodybuilding style of strength training.

I. Sarcoplasmic Hypertrophy vs. Myofibrillar Hypertrophy

Vladimir M. Zatsiorsky, renowned sport biomechanist, explains the difference between sarcoplasmic hypertrophy and myofibrillar hypertrophy in his informative book, *Science and Practice of Strength Training*. In short, sarcoplasmic hypertrophy is common among bodybuilders. This form of hypertrophy is distinguished by the growth of sarcoplasm and noncontractile proteins. Sarcoplasm is essentially the cytoplasm of a striated muscle fiber. Cytoplasm is a fluid like substance, consisting primarily of water. Sarcoplasmic hypertrophy brings about an increase in the cross-sectional area of the muscle fiber, with a decrease in filament area density. The result is a muscle that is larger, with no increase in strength. This form of hypertrophy is a byproduct of a bodybuilding strength program.

Myofibrillar hypertrophy is different. This form of hypertrophy is characterized by an enlargement of the muscle fiber, and an increase in filament density. Myofibrillar hypertrophy leads to increased muscle force production (Zatsiorsky, 1995).

Heavy weight lifting with low repetitions (ex. Olympic weightlifting) produces myofibrillar hypertrophy. Routines consisting of longer, submaximal sets (ex. bodybuilding style lifting) produce sarcoplasmic hypertrophy.

Our goal is to increase strength, without unnecessary gains in mass. Function is king in the infinite intensity world.

II. Mass vs. Endurance

The goal of this program is to develop athletes who are physically capable. I view the term *capable* as the ability to overcome extreme physical obstacles. Unfortunately, excessive gains in muscle mass are often accompanied by reduced endurance abilities.

The next time you consider the need for endurance, answer the question that follows and then decide.

Do you want to be known as a minuteman?

For your sake, I sure as hell hope not.

Consider a competitive fighter who enters the ring with a massive bodybuilding physique. Typically, this fighter will be out of gas after one round of intense action. When you focus your energy on gaining muscle mass, capillary density is reduced in the working muscles, which negatively influences aerobic abilities (Zatsiorsky, 1995).

My good friend John Scully, former world title contender and one of the most regarded boxing trainers in the sport today, always enjoyed boxing against muscle-bound opponents. As he described, a muscle-bound fighter will usually run out of gas when forced to fight in deep water (late rounds). Look at past greats such as Sugar Ray Robinson, Rocky Marciano, and Joe Louis. Younger readers may relate to recent stars such as Sugar Ray Leonard, Marvin Hagler, Floyd Mayweather, and Bernard Hopkins (just to name a few).

These men did not become the greatest fighters of all-time by building huge, muscle-bound physiques. Such a physique offers no benefits to a competitive fighter.

Strength is important, but not when it compromises other essential attributes. What good is an impressive build if you cannot use it?

Mel Siff specifically states that the prescription of hypertrophy training methods among qualified individuals “may be seriously detrimental to the strength and strength-speed performance of elite athletes” (2003a).

Furthermore, the vascular system cannot keep pace with the sudden increases in muscle mass. The vascular system is comprised of the vessels that carry our blood. Arteries carry oxygen-rich blood away from the heart. Veins carry oxygen-poor blood back to the heart. Unfortunately, these processes cannot keep pace with the mass gains brought about by sarcoplasmic hypertrophy. Nutrition and oxygenation of the muscle suffers. Metabolic processes in the muscle slow down, coupled with less efficient disposal of metabolic waste products (Siff, 2003a).

This training program will develop strength, while simultaneously building unstoppable endurance. No minutemen allowed!

III. Weight Classes

Combat athletes from sports such as boxing, wrestling, and the mixed martial arts train with the goal of improving strength (and performance) while remaining within specific weight classes. If you train like a bodybuilder, you will gain unnecessary mass, and be forced to compete in a heavier weight class. Unfortunately, the added weight will not produce performance improvements.

When an athlete jumps weight classes, it is common for the athlete to be labeled as a *blown up* fighter. For example, a natural welterweight will pack on muscle mass and be forced to compete as a middleweight. Although the individual will compete as a middleweight, he is still considered a *blown up* welterweight.

Just because you weigh something on the scale does not mean you are physically prepared to move up a weight class. Using bodybuilding techniques to jump weight classes can be detrimental to a fighter's career.

IV. Different Structures Adapt At Different Rates

A bodybuilding training program will produce rapid increases in muscle mass. Unfortunately, connective tissue such as tendons and ligaments do not adapt as quickly. As the athlete gains muscle mass, his tendons and ligaments do not keep pace. Rapid mass gains leave these structures susceptible to injury. The athlete is left with a greater likelihood for injury, coupled with slower muscle recovery.

As an athlete, your goal is to eliminate injury and enhance recovery between workouts. In doing so, you are able to train harder and more frequently.

To summarize, forget about training like a bodybuilder. This program will raise the bar on athletic preparations. This program will develop a fighter who is lean and mean. He will be toned, muscled, wiry, and tenacious. He will have the ability to fight hard, round after round. He will have the ability to run distance, sprint, jump, and maneuver his way through numerous obstacles. His body should be versatile, powerful, fast, and enduring.

Rise to the challenge. You will be surprised with the results. Most athletes do not realize the human body's potential. Obstacles are designed to be overcome, records destined to be broken. Do not limit your potential by taking two steps backward for every step forward. Each element of your training routine should have a specific purpose, offering a specific benefit. Training as a bodybuilder does not fit the bill.

TOOLS OF THE TRADE

This program will integrate several training modalities. Combat sporting events are multifaceted. To address this complexity, our routine must incorporate variety and progression to foster continuous improvements, while steering clear of boredom and burnout (physical and mental).

Many coaches in today's strength and conditioning industry avoid certain training tools. One reason for such neglect is the almighty dollar. Certain products and philosophies are recommended out of sheer monetary interest.

Consequently, these trainers prescribe one-dimensional routines, therefore develop one-dimensional athletes. Combat is multifaceted, so why would one prepare for the rigors of competition with such a narrow-minded approach?

Certain trainers recommend bodyweight exercise over weighted resistance work. Others recommend weight training, while steering clear of bodyweight calisthenics. Still others recommend proprietary training devices in place of all other traditional tools.

When you contemplate each training style, you are left dazed and confused, uncertain of which tools to use and which tools to ignore. Should you train with dumbbells or kettlebells, sandbags or barbells, bodyweight calisthenics or weights, high reps or low reps, distance running or interval training?

What equipment do you need? What equipment is not necessary?

Rather than argue over which equipment is superior, why not make the most of each training tool. Why limit yourself to one product or system simply because an athlete or trainer has endorsed its use?

I have trained with every piece of equipment I could get my hands on. I will never recommend something that I have not first tried myself. I will never create a routine that I have not personally tested.

Why am I rambling on with this information?

To convey one specific point...

I have no affiliations with any equipment manufacturers. If I recommend a training style or program, it is because it works. I have nothing to gain from recommending an overpriced, useless piece of equipment.

Barbells, dumbbells, sandbags, bodyweight exercise, medicine balls, weighted vests and sledgehammers are just a few of my recommendations. Each modality offers unique benefits.

Each tool is limited however, as the body will eventually adapt and need additional means of progression (ex. change drills or increase load). Do not limit yourself to one training tool. Mix it up, challenge the body in new ways, expand your training repertoire, and constantly strive towards personal improvements.

The exercises and routines described in this book will use many training devices. We will target the body with an ever-changing assortment of challenges, each with the specific goal of improving physical performance.

First, I will discuss the exercise pool. We will incorporate several movements into one complete routine. Variety will play an integral role in this training program. The workouts will change from week to week. The body will be forced to respond and improve.

After discussing each movement, we will proceed to a sample 50 day training program. This routine will apply the information discussed throughout, as I explain how each piece of the puzzle fits into place. Several objectives will be targeted, as you improve all facets of fitness.

You will have all the tools necessary to continue an infinite intensity training program for as long as you are up to the challenge. This is not an overnight miracle, nor a fad workout. This program integrates several training styles to form one complete system. Each piece of the puzzle will be explained in detail.

This may come as a surprise, as many trainers shy away from complete program creation. Program creation leaves the trainer open to criticism. Have no fear, I am not one to shy away from a challenge.

Today's strength and conditioning industry suffers from an ongoing problem. Many of the trainers are classroom educated, but real world illiterate. They have not been in the trenches, and lack direct experience in combat athletics. They grew up playing golf, with no understanding of the warrior lifestyle. They are quick to develop new exercises, yet clueless when it comes to putting the pieces together. It is easy to develop flashy new exercises, but what good is a new exercise if you cannot apply the movement to a complete training program?

Rather than avoiding the subject, these individuals will instead argue that no training routine can maximize strength and conditioning at any given time.

My response to this argument can be summarized with two words, "So what!"

Those who follow this methodology target one aspect of fitness at a time. They will first target strength, before switching to a conditioning emphasis.

The downside of such a program is that you are never well-rounded. You focus either entirely on strength or entirely on conditioning. Combat athletes need a unique blend of strength work and conditioning. You must be well-rounded at all times, willing to engage in a slugfest if necessary, while always capable of going the distance.

We will develop strength, mental fortitude, and unstoppable endurance. You will possess each quality at any given time, as you become well-rounded and always capable.

A fighter does not need the brute strength of a strongman competitor, so why train like one? He does not need the aerobic capacity of a marathon runner, so why train like one? A fighter requires a unique blend. This program offers a proprietary recipe that will serve the needs of today's combat athlete and warrior. The work will be difficult, yet rewarding.

If you are willing to put forth the effort, you will surely improve in all aspects of fitness.

NO DUMMIES HERE

"The elevator to success is out of order. You'll have to use the stairs ... one step at a time." - Joe Girard

Dumbbells will play an integral role in this training system. The dumbbell is one of the most effective training modalities available to serious athletes. We will use dumbbells to improve strength, endurance, core strength, and more.

Before discussing the specific movements and associated benefits, let's first clear the air regarding a commonly debated topic.

IS WEIGHTLIFTING DANGEROUS?

The simple answer is no. Competitive weightlifting has been an Olympic sport since 1896. The athletes who take part in competitive weightlifting are among the most powerful pound-for-pound human beings in the world. Their ability to accelerate heavy loads at blazing speeds is incredible.

Unfortunately, the debate rages on about the supposed dangers of weightlifting, with fierce arguments from each side. There are those who swear by the iron, while others refuse to utilize weighted resistance work, instead opting for bodyweight exercise.

It is unfortunate that so many trainers, authors, and athletes have followed (and recommended) such a narrow-minded approach to athletic training. Their students reap the benefits of one training style, while ignoring, and often discrediting, the effectiveness of all others.

Stop worrying about whether weight training is better or worse than bodyweight exercise. Both training styles are encouraged, as each offers numerous benefits. Do not limit yourself to one method based on an old wives' tale.

Is it dangerous to drive an automobile?

A Corvette is a safe automobile if the driver obeys the rules of the road. If the driver operates the car at 150 mph, it becomes dangerous. It becomes more dangerous if the driver drinks a bottle of vodka before hopping behind the wheel. The Corvette is not dangerous. The ignorant driver is the true culprit.

An automobile is as safe as the driver. If you learn how to drive and respect the laws of the road, your automobile becomes an efficient, safe method of transportation.

What about swimming? If I did not know how to swim and jumped into the water, I would drown. Swimming is not dangerous, but it becomes dangerous when an individual does not learn the techniques and respect the activity.

These same principles can be applied to weightlifting. An untrained person has no business attempting a one-rep maximum lift with a heavy dumbbell or barbell. He lacks the foundation, knowledge, and physical preparedness to engage in such an activity.

Does this mean the iron is dangerous? No! Weightlifting is safe and effective. Athletes from all sports have successfully integrated weightlifting into their training routines. Consequently, today's athletes are stronger, faster, and more powerful than ever before.

Ignorance is dangerous. The iron is not.

In fact, several force plate studies have shown that unloaded actions such as running and jumping impose greater joint stresses and muscle tension than heavy weightlifting (Siff, 2003b). Based on this information, it would appear that those who oppose weightlifting should also oppose casual jogging.

What about sports such as basketball, baseball, soccer, football, and hockey? These activities require explosive muscle actions repeatedly throughout each game. Examples include jumping for a rebound in basketball, hurling a 90 mph pitch in baseball, kicking a soccer ball, tackling in football, and striking the puck in hockey. If *explosive* activities are dangerous when performed as part of a training routine, what makes these activities acceptable during sport? Should all competitive sports be banished?

Of course not, but based on the *so-called* logic from the iron's naysayers, one is left with this impression. As you may have guessed, these questions are commonly ignored by those who discredit the effectiveness of weight training and other explosive techniques (ex. plyometrics).

Doesn't it make sense to train the same way that you will play?

Explosive training techniques are far from dangerous, when **properly applied** to an athlete's routine. Unfortunately, incompetent trainers commonly prescribe

such methods to untrained clients. Consequently, the iron receives blame, rather than the uneducated trainer.

Obviously, I would not recommend an explosive weightlifting routine to an untrained, overweight client. With that said, an untrained client can surely benefit from a **properly designed** weight training routine. Furthermore, an athlete with a sufficient strength foundation can (and should) incorporate more advanced techniques.

Considering that 127 million adults in the U.S. are overweight, 60 million obese, and 9 million severely obese, there are much more *dangerous* issues than the use of weight training techniques.

Play It Safe

In a study by Brian Hamill, weightlifting was found to be among the safest competitive sports. The study examined injuries per 100 participation hours for several sports. Partial results are listed below:

<u>Sport</u>	<u>Injuries Per 100 participation hours</u>
Schoolchild Soccer	6.2
UK Rugby	1.92
UK Basketball	1.03
USA Football	.1
Badminton	.05
USA gymnastics	.044
USA powerlifting	.0027
Weight training	.0035 (85,733 hours)
Weightlifting	.0017 (168,551 hours)

THE IRONY

Oddly enough, there are those from the combat sporting world who claim weightlifting is dangerous. What is more dangerous, lifting iron or competing in a combat sport?

According to certain *gurus*, weightlifting is dangerous, while combat sports are perfectly safe.

If I had to choose between weightlifting and being punched in the face, I would guess the iron is far safer.

As combat athletes, we accept the risk that accompanies our sports. Real fighters make this decision in their pursuit of victory. All sports carry some degree of risk. Baseball players are commonly hit with pitches that travel over 90 mph. Football quarterbacks are tackled by 300 pound lineman. Hockey players body check each other while moving at blazing speeds. NASCAR drivers maneuver their vehicles at speeds over 200 mph. Should all of these sports be banished because of potential dangers?

Should we lock ourselves inside a closet for fear of danger? Of course not!

Weightlifting is not dangerous. Obesity is dangerous. Drinking and driving is dangerous. Smoking is dangerous. Illegal drugs are dangerous. Lifting weights to prepare for sport is not dangerous.

The real danger of combat sports is entering the ring without proper physical (and mental) preparation. As an athlete, you must do whatever is necessary to ensure victory. If the iron can benefit you, it is dangerous to avoid its use.

Remember, you do not *play* a combat sport the way you *play* golf. Once you step inside the ring, you must be ready for war. It is kill or be killed. If you do not prepare yourself for the rigors of competition, you are putting yourself in danger.

Many will read this discussion and say, *"Yeah, but my buddy is all busted up from years of weight training."*

My response is as follows...

Where did your friend learn the important principles of weight training? Did he walk into the gym and start playing with the iron? Was he knowledgeable about the importance of progression, gradual overload, restoration, and proper technique? Did he obsess over his one-rep maximum, trying to lift more weight than he could safely handle? What was the REAL cause of injury?

The iron is always easier to blame than the user. It is the perfect scapegoat.

Still not convinced? Go ask Jack LaLanne, a true fitness pioneer. At age 90, Jack LaLanne still preaches the importance of weightlifting and sensible nutrition. He continues to follow an active lifestyle without aches and pains. He has lifted weights longer than most of us have walked the earth.

Let's end this discussion with a quote from Henry Rollins.

"The Iron never lies to you. You can walk outside and listen to all kinds of talk, get told that you're a god or a total bastard. The Iron will always kick you the real deal. The Iron is the great reference point, the all-knowing perspective giver. Always there like a beacon in the pitch black. I have found the Iron to be my greatest friend. It never freaks out on me, never runs. Friends may come and go. But two hundred pounds is always two hundred pounds."

DUMBBELL TRAINING

Dumbbells are inexpensive and easy to store. You can quickly (and easily) convert your living room into an effective power factory with a few dumbbells. Many individuals disregard weight training because of space limitations. They assume that storage is required to house a 7' Olympic barbell. If you find yourself in this situation, dumbbells offer the perfect solution.

You will never outgrow the use of dumbbells. If the movements become too easy, simply add more iron. I do not foresee any iron shortages in the near future. You can always find more iron to add to your dumbbell. If you prefer fixed hexagon dumbbells, you can typically find weights for 50 cents (or less) per pound. A 100 pound dumbbell will cost less than an hour session with many personal trainers.

TOOLS OF THE TRADE

Common dumbbell styles include:

Plate Loaded - Plate loaded dumbbells are an excellent choice. These dumbbells allow for convenient and precise weight adjustments. These dumbbells also tend to be inexpensive. You can buy five and ten pound plates at most sporting good stores (even large stores such as Wal-Mart).

Dumbbell handles vary in length. Common lengths include anything from 14 to 24 inches. Personally, I recommend both 18" and 24" handles. The 14" handle does not provide enough room for more than four or five weight plates per side. Many athletes will outgrow a 14" dumbbell handle.

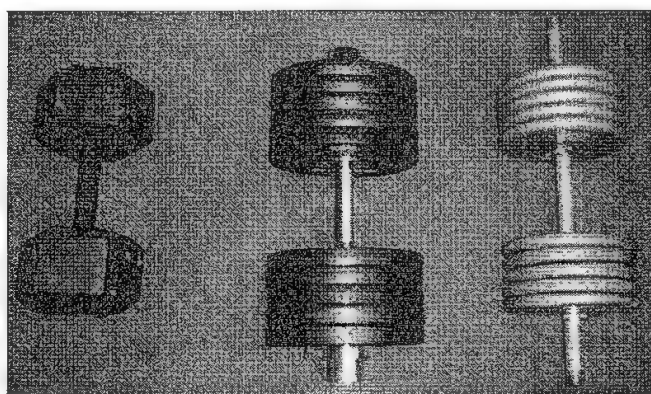
Unfortunately, longer dumbbell handles can be difficult to find at most sporting good stores. Even if you do find them, you may notice a price tag that would suggest the handle was carved from a block of gold. Longer dumbbell handles can get very expensive.

Fortunately, inexpensive alternatives do exist. Homemade dumbbell handles are easy to make and extremely durable. You can buy steel or iron pipe at many hardware stores. You can also look for a steel shop in your area. Most shops will cut the pipe to your desired lengths.

I have created several homemade 18" and 24" dumbbells from galvanized iron pipe. I bought the pipe for these handles at a local hardware store. The 18" and 24" lengths were stocked items, and did not need cutting. Each handle cost less than \$4. Not a bad price for a durable handle!

I typically use the 18" handle for traditional exercises such as the snatch and overhead press. The longer 24" handle is excellent for exercises such as the farmer's walk (whenever you need to go very heavy). You can load ten plates on each side.

The picture to the right shows (from left to right) a hexagon dumbbell, an Olympic dumbbell, and a 24" dumbbell, made from galvanized iron pipe.



If you choose the homemade option, I recommend bringing a weight plate to test on the pipe. Do not have any pipe cut before testing your plates on the pipe. A handle is useless if the weights do not fit. I learned this lesson the hard way. I bought a 1" diameter pipe and later found that this measurement was for the inner diameter. The standard 1" plates were too small for the pipe. I then bought a 3/4" pipe (inner diameter) and found that the plates were a perfect fit. Always try before you buy.



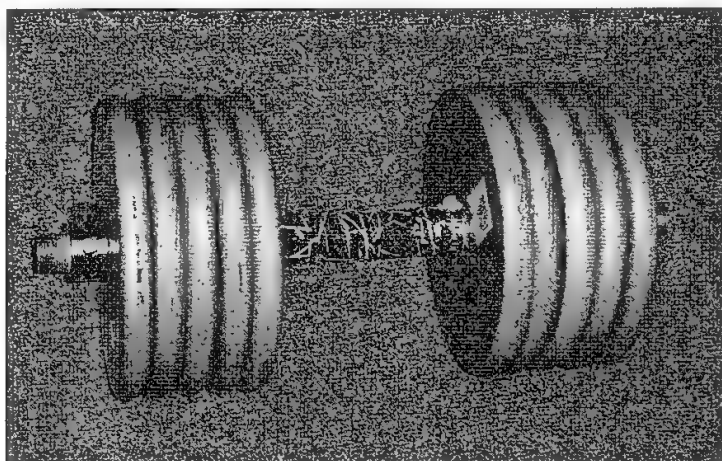
Along with the handle and weights, you will need a quality collar to secure the weights in place. Once again, you can choose a low-budget alternative. If you look closely at the illustration above, you can see that I have used standard hose clamps for collars on the 24" dumbbell. These clamps are available for less than \$1 each.

Screw the clamps on as tight as possible to avoid accidents.

I add a second layer of protection to the inner collars (where you grip the handle) by coating them with industrial-strength epoxy. You will not be able to remove the inner collars once the epoxy has cured. Although the epoxy may not be necessary, it adds peace of mind, knowing the collars are safely secured.

If you prefer a more conventional clamp, I recommend the Bulldog II™ collars available from Ironmind.com. These collars are excellent for securing heavy loads.

Below, I have provided an illustration of an 18" homemade dumbbell handle. I used hose clamps for the inner collars. I secured each clamp with epoxy. I used Bulldog II™ collars for the outer collars. I also wrapped the handle (between the two inner collars) with a baseball bat handle grip. The baseball bat grip is excellent to ensure a solid grip on the dumbbell. A nice gripping surface is important when the dumbbell becomes damp with perspiration. You can buy an adhesive baseball bat grip at any sporting good store.



Hexagon - Fixed weight hexagon dumbbells are also common. Most sporting good stores will carry dumbbells in 5 pound increments, all the way up to 100 pounds. Hexagon dumbbells are useful because there is no need to secure the weights with collars. Hexagon dumbbells can also be useful for throwing exercises such as the dumbbell shot put on page 44. The downside of this dumbbell style is the inability to adjust the weight. As you grow stronger, you must buy new dumbbells, rather than simply buying a few more weights.

Olympic Dumbbells - A third option that is convenient for heavier loads is the Olympic dumbbell style. These dumbbells can house standard Olympic weights. The diameter at the end of the dumbbell is 2 inches.

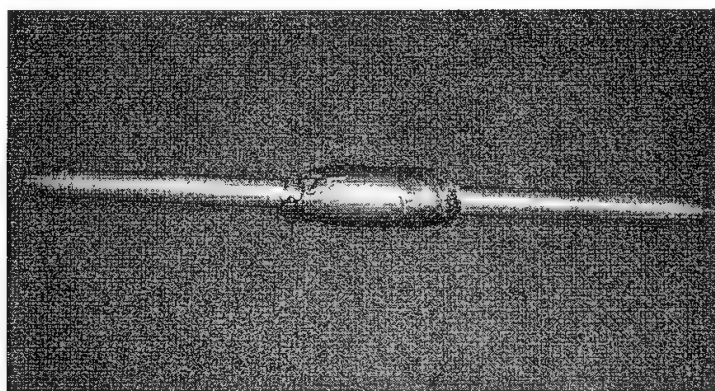
Personally, I find Olympic dumbbell handles to be bulky during movements such as the snatch.

Thick Handle Dumbbells - Standard dumbbell handles are between 1" and 1 1/16" diameter. Thicker handle dumbbells are available from many providers who specialize in strongman training equipment.

Thick handle dumbbells are much more difficult to lift. The 2" or 3" diameter handle provides a substantial challenge to the grip and forearms. Every exercise that you perform with a thick bar will add a grip workout as a secondary benefit. Thick handles will feel awkward at first. It takes some time to adjust to this style of lifting. I highly recommend adding a thick bar component to your program.

If you do not wish to purchase a thick handle dumbbell, you can instead create your own.

One inexpensive option can be constructed by simply wrapping the handle with duct tape. Wrap the handle evenly between the two inner weight stops (collars). You can see how the handle below was quickly converted to a thick handle bar with a cheap roll of duct tape.



I recommend covering the duct tape with a baseball bat grip to ensure a solid grip. The duct tape will become slick when damp.

Ultimately, you must choose a dumbbell style that fits your personal needs. I conduct most of my dumbbell training with several homemade handles.

BENEFITS OF DUMBBELL TRAINING

Dumbbells offer numerous benefits such as strength and power development.

Perhaps the greatest advantage however is the unilateral component. A barbell connects the two arms together. A dumbbell forces each limb to work independently, creating a greater need for stabilization and coordination.

Many athletes have strength and coordination differences between the right and left side. When lifting a barbell, the dominant side (ex. right hand) is able to assist its weaker counterpart. Strength imbalances remain and often intensify. When training with dumbbells, the dominant side is unable to assist. The weaker side must operate on its own.

Furthermore, dumbbells are excellent for multiplanar training applications. The biomechanics of athletics involve several planes of motion. Dumbbells are useful for training movements throughout the sagittal, frontal, and transverse planes. You can mimic many sport-specific motions and activities with dumbbells. You will achieve greater range of motion, which increases the recruitment of stabilizer muscles. The result is an effective tool for functional training applications.

Dumbbell training is far superior to any resistance machine. Resistance machines restrict and control range of motion. Continued machine use can actually modify the programming of the brain, reducing the functional abilities of the muscles (Siff, 2003a).

Joint stability, an important aspect of motor coordination, is ignored during machine training. Free weights require balance and coordination. You control the weight. When training with a machine, the machine controls you.

Remember, we train for function. What good is a well-muscled physique with no useful ability?

Old time strongmen such as Arthur Saxon, Louis Cyr, and Hermann Goerner lifted free weights. The resistance machines that litter modern gyms were nonexistent. Today's society is soft. People are searching for easier ways to achieve strength and fitness.

The easy road is the path most often traveled. Unfortunately for the lazy majority, the human body cannot be automated. The best training machine is still inferior to a low-tech piece of iron.

Lift the iron. Throw the iron. Carry the iron. You will become a powerhouse, much more capable than any resistance machine byproduct.

Whether your goal is speed, power, endurance, or core strength, the dumbbell offers a perfect solution. Say good-bye to resistance machines and isolation exercise. We will focus our energy towards multiplanar, full body movements.

OVERVIEW OF STRENGTH CONCEPTS

This training program will target several aspects of strength. Strength is commonly defined as the *ability to exert a force against a resistance*. Examples of *resistance* include weights (ex. dumbbell), an opponent in a wrestling match, or any other physical obstacle.

Unfortunately, this simplistic definition is not sufficient. Different sporting events need different forms of strength. This fact is visible when comparing athletes from various events. For example, consider the difference between a boxer and powerlifter. The powerlifter is required to lift tremendous loads during competition. The need for maximal strength outweighs the need for strength endurance. A boxer, on the other hand, needs tremendous hand speed and the ability to maintain punch output round after round. It is not enough to be strong for one instant, the boxer must maintain strength throughout the contest.

This program is designed to create athletes who are well-rounded. We are searching for the optimal strength profile that suits our competition. My area of concentration as an athlete and trainer is the combat sporting world. This program will address this audience.

Each aspect of strength was considered during the creation of this program. The routines that follow (in a later chapter) are not intended to create powerlifters. The strength needs of a fighter are much different. We must develop the ability to exert force quickly and efficiently, for as long as necessary.



Let's begin with a brief overview of the primary forms of strength.

Maximal Strength – Maximal strength is defined as the amount of force that one can exert under voluntary effort (ex. the maximum weight that you can lift for 1-repetition). Maximal strength training offers several benefits to the athlete. This style of training has a tremendous effect on motor units.

Muscle fibers are grouped into motor units. A motor unit contains hundreds of muscle fibers and one nerve, which delivers a signal to the muscle fibers. When a signal is passed for the motor unit to contract, all the fibers within that motor unit contract. In addition, all the muscle fibers contained within the motor unit are of the same type (fast twitch or slow twitch).

This information is extremely important when training for an explosive sporting event. To train for such an activity, one must target the fast twitch muscle fibers. Unfortunately, not all motor units are activated at once. Low intensity exercise does not activate the fast twitch muscle fibers. If the exercise does not stimulate a fast twitch motor unit, the muscle fibers contained within the unit will not adapt to the training. Essentially, if the motor unit is not recruited, no response occurs.

When lifting heavy loads (training maximal strength), a high percentage of motor units are activated. During such intense loads, fast twitch motor units are recruited. When submaximal loads are lifted, the fastest (most powerful) motor units are not recruited.

Maximal strength training is superior for improving both intramuscular and intermuscular coordination (Zatsiorsky, 1995).

Intermuscular coordination refers to the synchronization of different muscles to cooperate during a given motor task. This essentially equates to the joint effort of different muscles to perform a given movement. For example, when snatching a dumbbell from the floor, different muscles will play different roles (ex. prime movers, stabilizers, synergists). The body's ability to flawlessly coordinate these efforts is an example of intermuscular coordination.

Intramuscular coordination refers to the ability to recruit high threshold motor units to execute a task. Advanced weight trainees will be able to recruit a much higher percentage of muscle fibers than novice lifters. Obviously, the greater percentage of motor units that you can recruit will result in greater strength potential.

One way to understand intramuscular coordination is by considering an automobile engine. Suppose you bought a new Corvette with an eight cylinder, 400 horsepower engine. If you could only use four cylinders, thus producing only 200 horsepower, the car would have poor *intramuscular coordination*.

After considering these definitions, the role of the central nervous system (CNS) in strength development becomes clear. Strength is largely determined by one's ability to activate a maximum percentage of muscle fibers, which is a function of

the nervous system. Fortunately, heavy weightlifting develops superior neuromuscular capabilities.

Based on this information, one may assume that an athlete should focus all of his attention to maximal strength development. After all, this style of training is superior for developing neuromuscular coordination.

Does it make sense to focus all of our attention to maximal strength training?

No! Maximal strength is just one of many needed qualities.

Unfortunately, many athletes and coaches make the mistake of overemphasizing maximal strength development. In fact, extraordinary development of absolute strength has a negative influence on speed (Verkhoshansky, 1977).

Speed is perhaps the most critical factor in the sporting world. Without speed, strength is useless. A strong fighter who cannot land a punch is hopeless. Our strength program will balance maximal strength work with other forms of strength training.

Maximal strength provides a solid foundation for explosive training techniques. Too much work on max-strength however will quickly lead to burnout, both physical and mental. The central nervous system (brain and spinal cord) needs time to recover from such intense training sessions. As stated by sports scientist Alexsei Medvedyev, "frequent lifts with limit weights results in an accumulation of incomplete restoration, and can cause a decrease in competition, overtraining and injury" (Medvedyev, 1986).



To understand the significance of the central nervous system, consider the following information. When lifting a weight, the CNS sends a nerve impulse to the muscle. This impulse causes the muscle to contract and perform work. The speed, power, and frequency of the nerve impulse depend on the state of the CNS. As fatigue increases, the number of motor units recruited decreases, which negatively affects the force of the ensuing contraction. A fatigued CNS leads to decreased coordination and reduced power output. (Bompa, 2003).

To avoid these problems, we will incorporate variety into the strength program. By varying exercise selection and intensity, we can minimize fatigue of the central nervous system. We cannot be sidelined by fatigue and sluggishness.

Our goal is to be strong and fast, while remaining fresh and capable at all times.

Let's now turn our attention to explosive strength.

Explosive Strength - Explosive strength is defined as the ability to express significant tension in minimal time. Explosive strength is considered the "strength ability most characteristic of athletic activities" (Verkhoshansky, 1977). Essentially, your ability to produce significant neuromuscular tension in minimal time is explosive strength. This definition shines light on the importance of this strength quality. Clearly, strength without speed is useless as a combat athlete. The time required to produce strength is often minimal. We must be prepared to explode quickly with force.

The ability to produce maximal force and the ability to produce velocity in the same motion are different motor abilities. Many athletes are missing the boat with their strength programs. Their endless quest for one-repetition strength detracts from their development and performance as an athlete. The strongest athletes in the weight room are **not** always the strongest athletes on the field (or inside the ring).

When considering the importance of explosive strength, answer the following question.

What is more important to your success as an athlete?

1. To develop one-repetition strength in the gym
2. To produce optimal strength at any given instant

I highly recommend that you choose #2. This quality is far more critical to your success as an athlete.

We will develop explosive strength with numerous drills and movements. These explosive techniques will increase the central nervous system's rate of response. Recruitment patterns will become more refined, as you become a more efficient and effective athlete.

Speed Strength - Speed strength is defined as the ability to quickly execute an unloaded movement or a movement against a relatively small external resistance.

Consider a fighter who throws a punch while wearing a 10-ounce boxing glove. The weight of the glove is insignificant. The punch must be thrown with lightning speed. In this situation, there is not enough time to display maximal strength. The boxer therefore relies on speed strength and explosive strength.

Unfortunately, many coaches ignore this information, neglecting speed strength and explosive strength. Their lack of real world experience in the combat sporting world adds to the problem. These individuals lust over maximal strength development, when the real need is explosive strength and speed strength. In fact, it has been shown that excessive maximal strength training can hinder speed strength and technical skill in boxers (Verkhoshansky, 1977).

Furthermore, Filinov found that training with excessively heavy strength loads can reduce the force and speed of a boxer's punches (Siff, 2003a). This information is of paramount importance when training for combat. We must develop strength without ruining the speed qualities of the neuromuscular system.

When training for speed strength, the preferred approach is the use of light loads (ex. light weights and medicine balls), accelerated at top speeds. We will also use sport-specific techniques such as punch-out drills against a heavy bag (explained later).

Although many believe that speed is born and not produced, do not lose hope. Improvements in speed are well documented. If you train properly, you can surely increase speed.

Strength Endurance – Strength endurance is defined as the ability to effectively maintain muscular functioning under work conditions of long duration.

Endurance is one of the most important qualities of a fighter. The conditioning drills detailed in this program will be among the most gut-wrenching that you have ever performed. The goal of these routines is to develop both physical and mental abilities.

We will use dumbbells in conjunction with other drills (ex. bodyweight calisthenics) to form several intense conditioning routines. These drills will improve anaerobic endurance and work capacity, while developing indomitable mental fortitude.

When training for endurance, we will use higher repetitions with full body movements. These drills will result in a great expenditure of energy, therefore eliciting tremendous adaptations within the body. Your endurance will shoot through the roof, as you learn to *fight* through what was previously unbearable fatigue.

The importance of endurance is easily understood with the following analogy.

Consider a brand new Corvette that is stuck in your driveway without gasoline. Regardless of the engine (strength), the automobile is useless without a tank full of gas (endurance).

Strength in combat is equally useless if you lack the ability to use it throughout the competition.

DUMBBELL LIFTS

In the section that follows, I will show several dumbbell lifts. First however, I would like to address one commonly debated topic. The debate is about whether an athlete should train with the Olympic lifts. The two lifts that form the Olympic sport of weightlifting are the snatch and the clean-and-jerk. Each lift requires that a barbell be hoisted overhead.

Olympic weightlifters are among the most explosive athletes in the world. For this reason, many coaches have integrated Olympic weightlifting routines into their athletic strength programs. The reemergence of Olympic weightlifting is a nice shift in thought from the bodybuilding craze that has hampered the athletic strength training industry for so long.

The obvious question that remains is whether an athlete should train with the Olympic lifts.

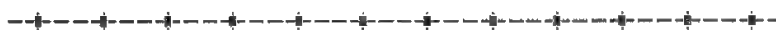
There are fierce arguments from coaches who stand by the Olympic lifts, with others who believe the lifts are a waste of time. Personally, I tend to land somewhere in the middle. While I believe the Olympic lifts are useful, these competitive lifts require a fair amount of skill training for proper (and safe) execution.

If I had to choose between a fighter who had technical mastery of a left hook or technical mastery of the Olympic snatch, I would choose the fighter who can throw a powerful left hook.

Combat athletes already have significant skill training needs. A mixed martial artist must train his ground game, striking, kicks, and more. Does he really have time to add another skill training component such as Olympic weightlifting? In my opinion, he is better served by choosing strength training methods that have a minimal learning curve. A fighter is training to fight. He is not training for competitive weightlifting.

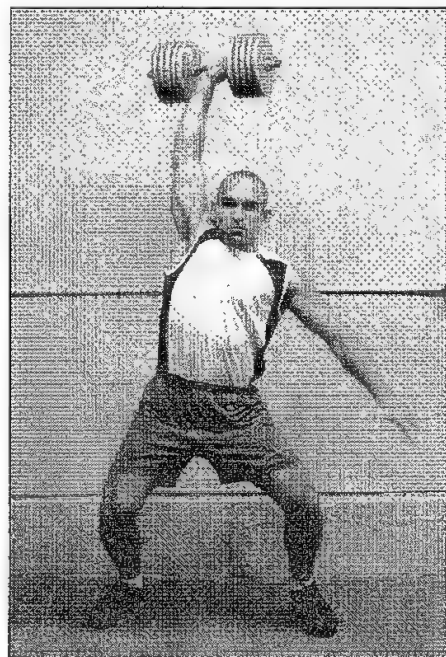
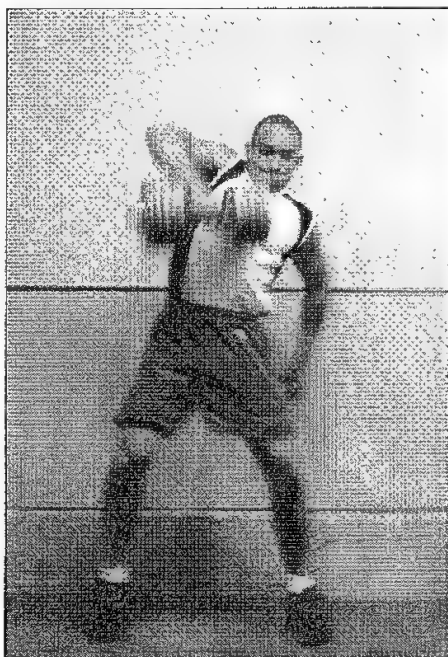
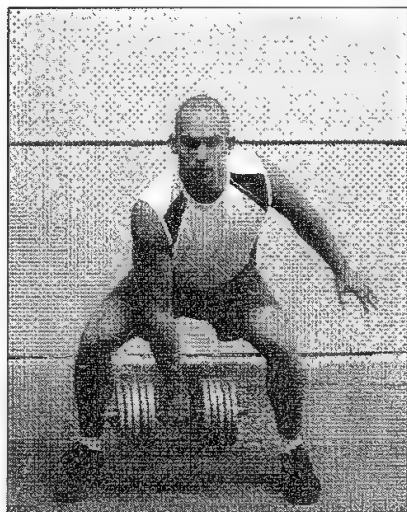
To those foreign to the fight game, it is almost impossible to understand the complexity of the skills needed to excel. Almost every fighter has a need to improve certain technical aspects in his game. To succeed in combat, these athletes must dedicate much of their time to improving sport-specific skills. For this reason, I recommend using less technically demanding lifts.

A dumbbell is an excellent choice. An athlete can begin experiencing strength benefits immediately, without learning complex lifting techniques. A dumbbell is the tool of choice when searching for a training modality that maximizes convenience and effectiveness, while minimizing complexity. We can use dumbbells to train several Olympic weightlifting variations (ex. snatch) without spending too much time learning the technical aspects of the lift(s).



Let's start with the **dumbbell snatch**. Begin by squatting over a dumbbell that is positioned between the legs. Next, you will explode upward, bringing the dumbbell overhead. Throughout the upward ascent, the dumbbell will remain close to the body. You will then reverse the motion, bringing the dumbbell back to the hang position.

If you are using very heavy loads, you may return the dumbbell to the ground between reps. You can also use the non-working hand to aid with the descent. When emphasizing explosive strength and conditioning, I lower the dumbbell to the hang position. When working with very heavy loads, I will lower the dumbbell all the way to the ground, alternating hands between repetitions (ex. 1 rep left arm, then 1 rep right arm).



You can also use the snatch as a tremendous full body conditioner by performing higher repetitions, with moderate loads.

When executing the dumbbell snatch, I perform a power variation, as opposed to the deeper Olympic snatch. Olympic weightlifting utilizes a much lower receiving position. During the power variations, you will only lower the body into a partial squat position. I prefer to train with the power variations, as these lifts are easier to learn, still offering numerous benefits to the athlete.

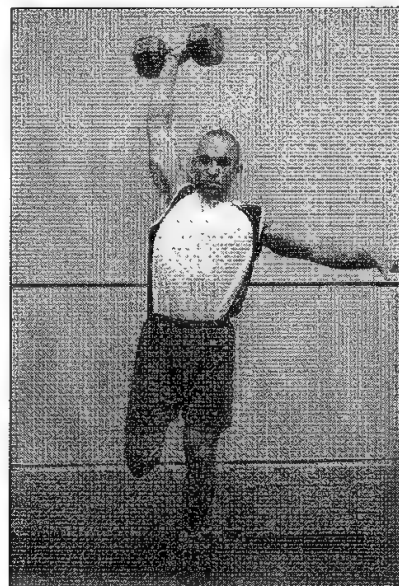
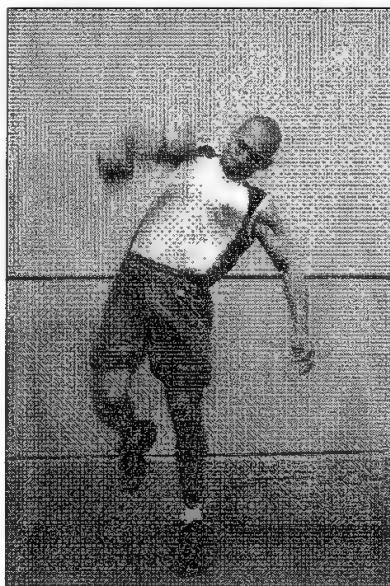
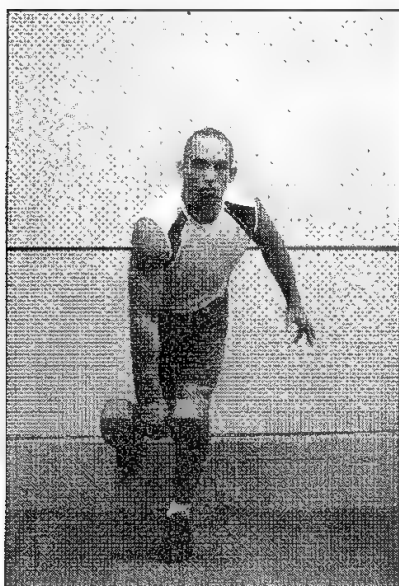
Power Vs. Olympic

One of the most popular power variations (familiar to many) is the barbell power clean. Only a partial squat is used in the receiving portion of the power clean. This is much different from the squat clean. Not as much weight can be handled with a power clean, as the bar must be raised higher in comparison to the squat clean.

SNATCH VARIATIONS

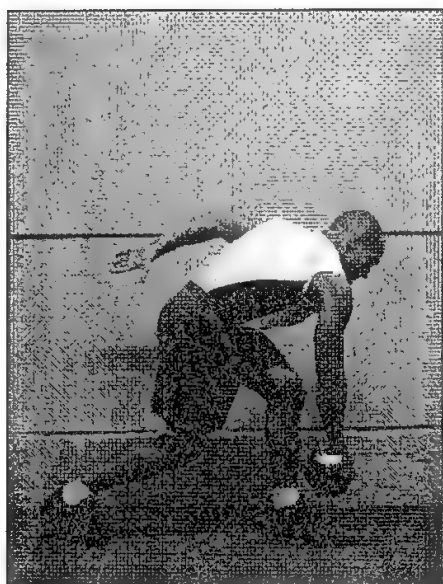
There are several variations to the one-arm power snatch.

To increase the balance demands of the snatch, you can perform a **one-arm, one-leg variation**. Use an opposite arm and leg sequence. The right arm will snatch with the left leg grounded, and vice versa. This movement will require a blend of balance, strength, and coordination.



A rotational element can be incorporated into the dumbbell snatch with a **twisting snatch**. For this variation, you will begin with the dumbbell positioned in front of one foot. The dumbbell will hang in an outstretched arm, just above ground level. From this position, you will snatch upward, while simultaneously pivoting from the feet. While snatching upward, you will travel throughout a 180-degree turn, as you end facing in the opposite direction. Reverse the motion, returning to the beginning position and continue.

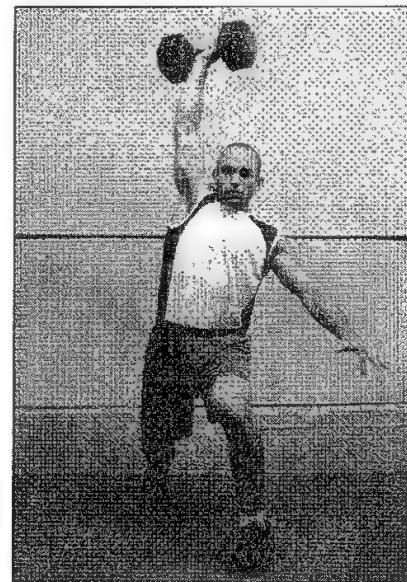
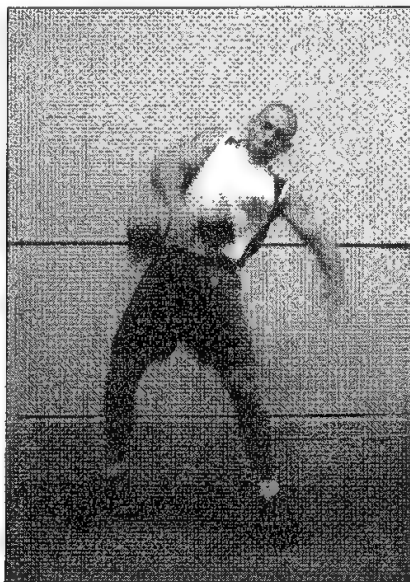
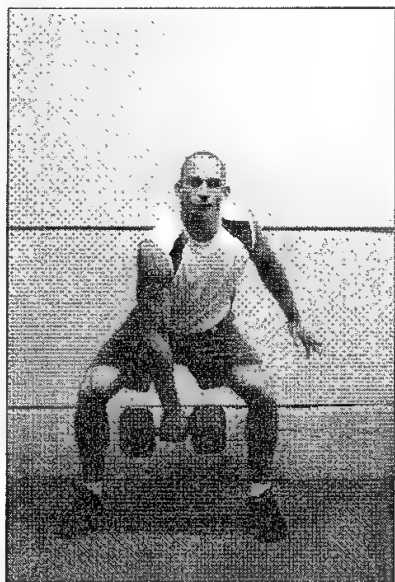
This variation will develop tremendous strength throughout the core, with particular attention directed to the hips. As with all one-arm variations, work both sides evenly.



Yet another single-handed snatch variation can be performed with a split stance. The **one-arm split snatch** offers a tremendous demonstration of athleticism and strength.

To perform this movement, you will begin with the dumbbell hanging by the knees. From this position, you will initiate an upward snatch, while shuffling the feet in mid air. When performing a right-handed snatch, you will land with the left foot in front.

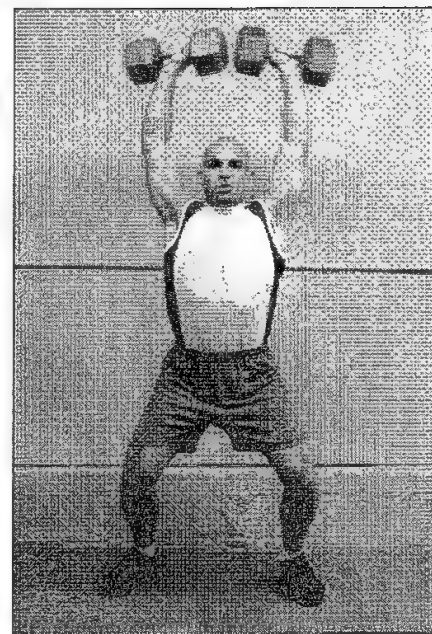
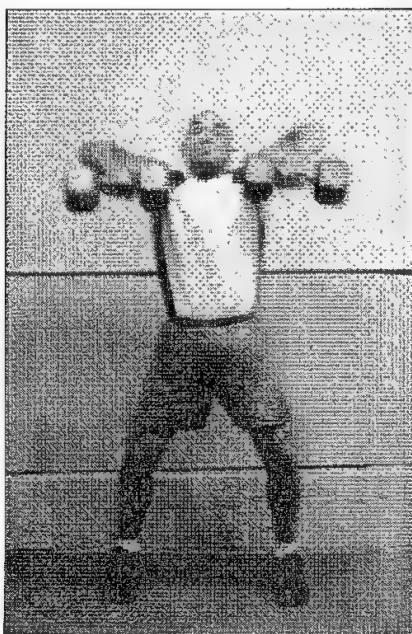
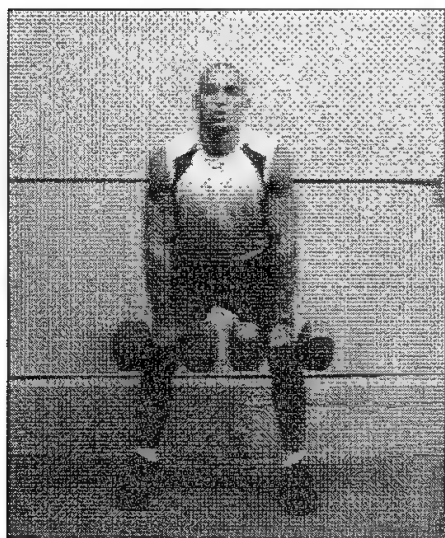
As you can see in the illustrations that follow, you will land in the split stance, with the front foot pointed slightly inward, as the rear leg is supported on the ball of the foot.



Upon landing, you will reposition the feet to the starting stance. Continue with another repetition. Train one side at a time (ex. 5 reps with the right arm, then 5 reps with the left arm).

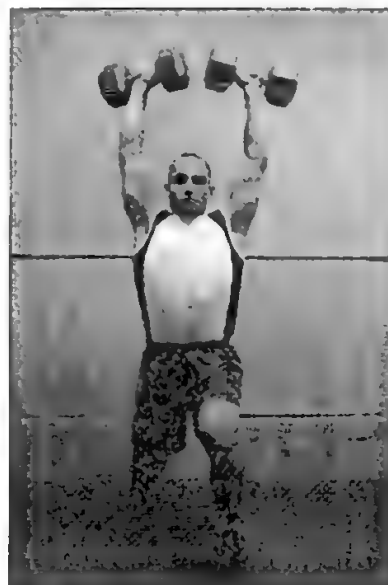
DOUBLE TROUBLE

For a greater challenge, you can snatch two dumbbells at once. The **double snatch** is much more challenging, as it requires greater flexibility within the shoulders. For this variation, you will begin with the dumbbells hanging at approximately knee level.



As with the single hand snatch, a more athletic variation (of the double snatch) can be performed by adding a **split**. This advanced movement will require a blend of coordination, strength, and flexibility.

You will alternate the lead leg during each repetition. Below, I have led with the left leg. For the next repetition, I will lead with the right leg.



An equally challenging **two-handed split snatch** can be performed by snatching the dumbbells outside the legs. For this variation, the dumbbells will remain on the side of the body. As you snatch upward, the dumbbells travel past your rib cage.

This athletic movement is one of the best exercises that you will find.



SWINGING

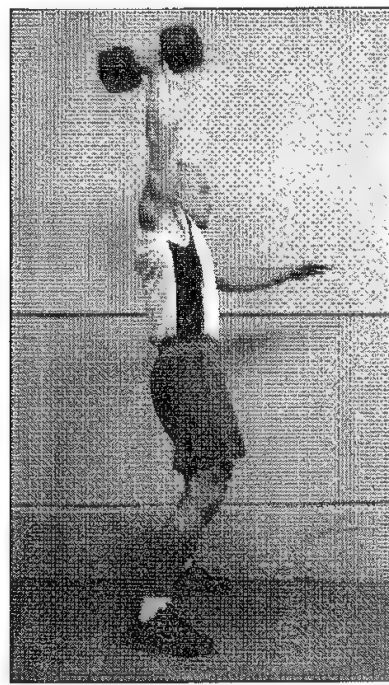
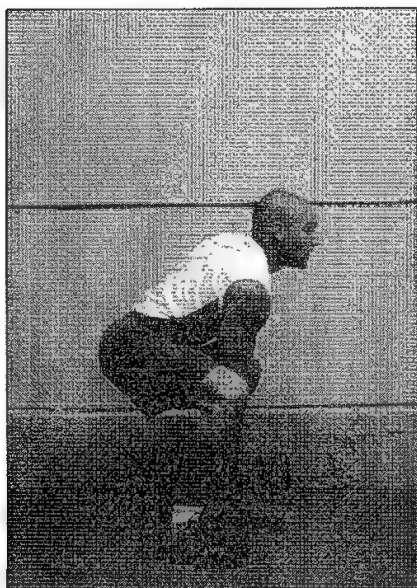
Another excellent unilateral movement is the **dumbbell swing**. This full body exercise is particularly effective for the development of power throughout the hips. If this movement is new to you, you can expect some initial soreness in the hamstrings.

First, bend down until the thighs are almost parallel with the floor. From this position, you will produce power from the lower body, as you swing the dumbbell overhead. The working arm will remain straight. An explosive drive from the hips is crucial for this exercise.

The dumbbell swing is an excellent conditioning movement when performed with moderate to high repetitions.

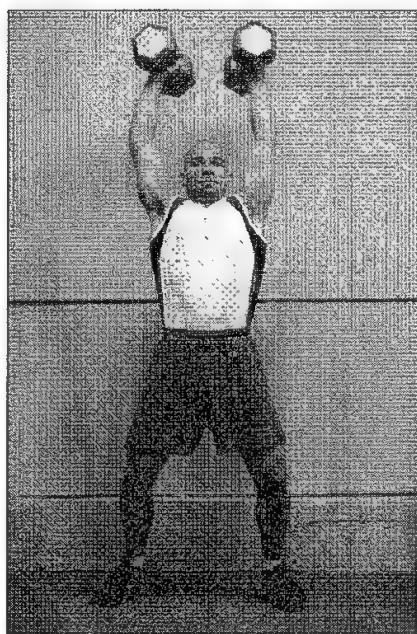
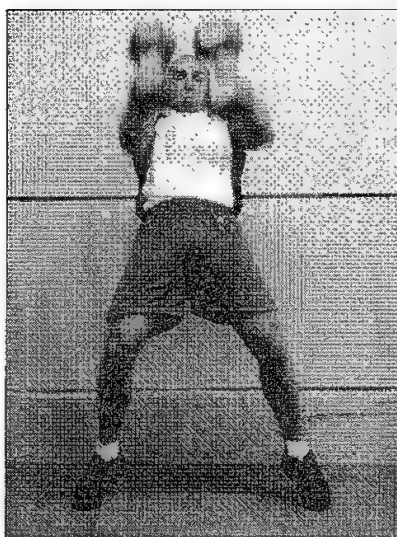
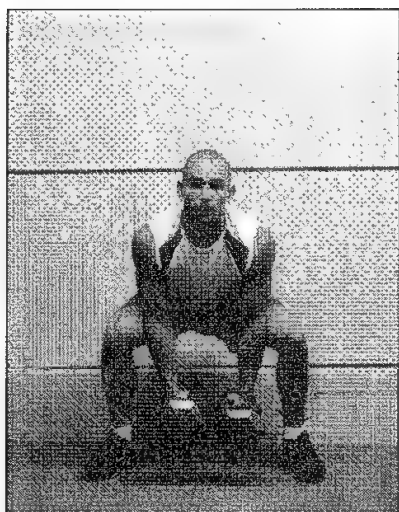
There are those who perform this movement with two hands at once. I recommend the one hand variation. When swinging a dumbbell with two hands, it is difficult to obtain an even grip with each hand. You will also miss the unilateral benefits associated with a one hand swing.

Stick with the one hand variation for maximum effectiveness.



To incorporate two hands into the swing, you should use two dumbbells. For this swinging variation, you will assume a slightly wider stance to accommodate the dumbbells. Keep the dumbbells close together, as you swing upward. Once again, generate power from an explosive hip drive.

A high repetition set of **double dumbbell swings** will leave your heart beating like a drum!



HOT OFF THE PRESSES

An excellent feat of strength is the ability to pick something up from the ground, and then press it over your head.

A dumbbell is the tool of choice for overhead pressing. Each limb must fight its own overhead battle.

There are those who will read this discussion and say, *"Yeah, but isn't the overhead press just a shoulder exercise."*

No way!

The movements that follow are full body lifts. Total body strength is imperative for overhead pressing. If you have weaknesses (ex. poor strength in the core), the overhead press will identify the flaw. The weak area will have nowhere to hide!

Perhaps the ultimate dumbbell exercise is the **clean and press** from the floor. This movement will develop real strength. If you had to choose one exercise, this would not be a bad choice.

Start by squatting over the dumbbell. Next, you will clean the dumbbell to the shoulder. From this position, you will squat down partially, and explode upward as you press the dumbbell overhead. Return the dumbbell to the ground and continue.

As you can see in the illustrations below, I use my non-working hand to aid with balance.

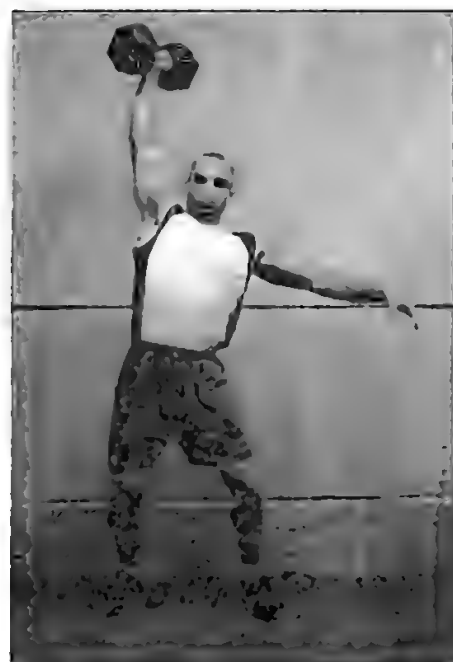


Unlike the dumbbell snatch and swing, which are useful for both strength and conditioning, I prefer to use the clean and press for pure strength development. This movement is ideal for heavy lifting.

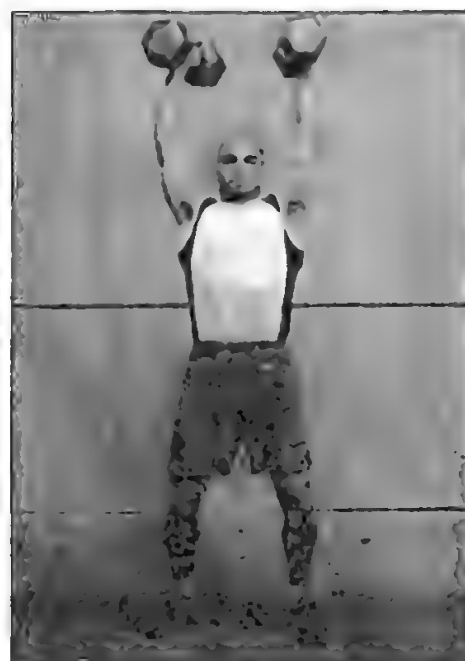
You can work one side at a time, or alternate between left and right. Personally, I prefer to alternate sides when working with heavy loads. The set essentially is broken down into a few heavy singles. For example, a set of six repetitions (3 per side), involves three heavy singles. You will lift the dumbbell overhead with the right arm, return it to the ground, lift it overhead with the left arm, and continue in this alternating fashion.

The clean and press can also start from the **hang position**. For this variation, you will load the dumbbell outside the leg. Sit the hips back, which will form a slight bend in the knees. From this position, you will clean the dumbbell up to the shoulder before pressing it overhead.

You can maintain a faster pace with this variation. If you choose this option, work one side at a time (ex. 5 reps right side, and then 5 reps with the left side).



This movement can also be performed with two dumbbells.



In addition to the clean and press, the dumbbell is ideal for movements such as the **push press** and **push jerk**. Each movement can be performed with one or two dumbbells. There are countless variations that you can perform to prevent staleness.

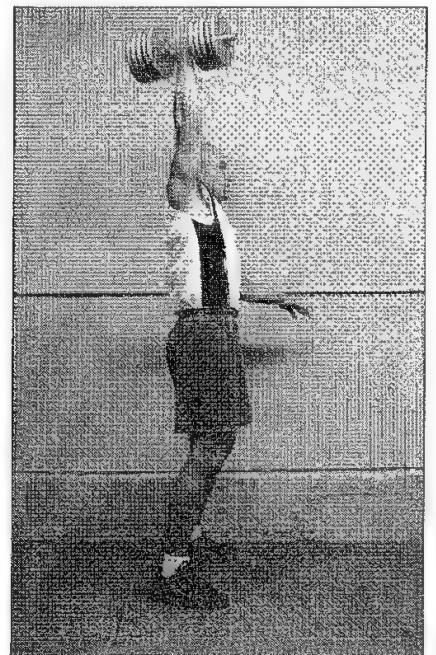
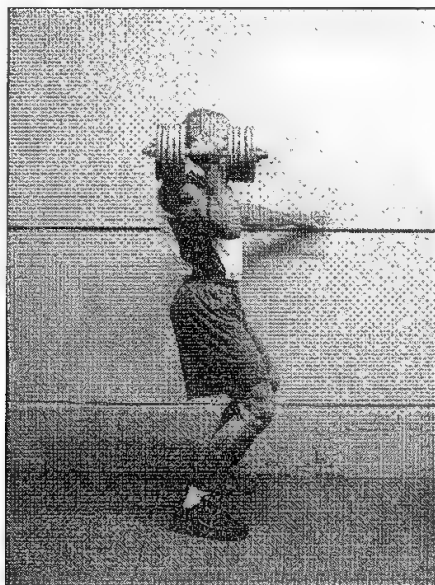
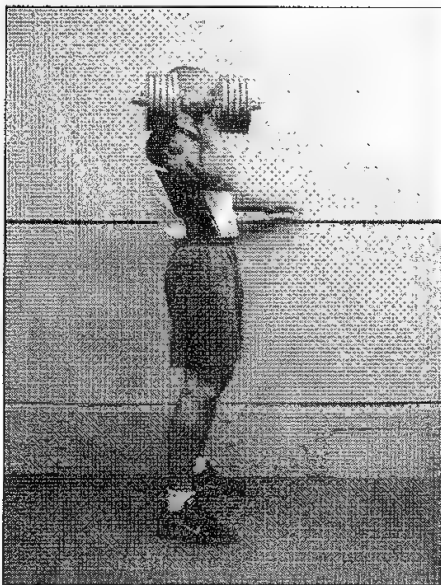
Almost every movement from this chapter can be performed with one or two dumbbells. The clean and press from the floor is one of the few movements that I only train with one dumbbell (one arm at a time). Due to the extended range of motion and heavy load being used, I focus on one side at a time.

For almost every other pressing movement, I encourage variety.

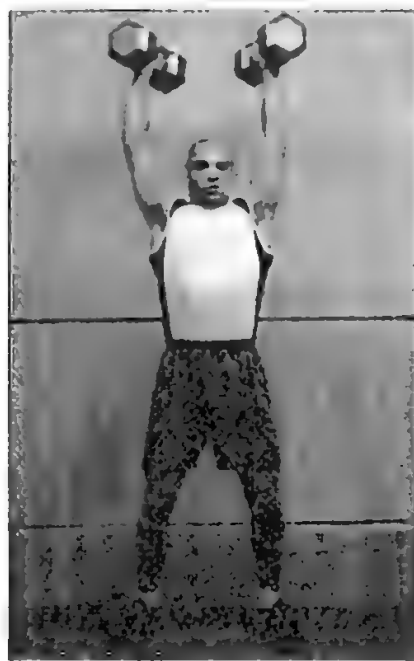
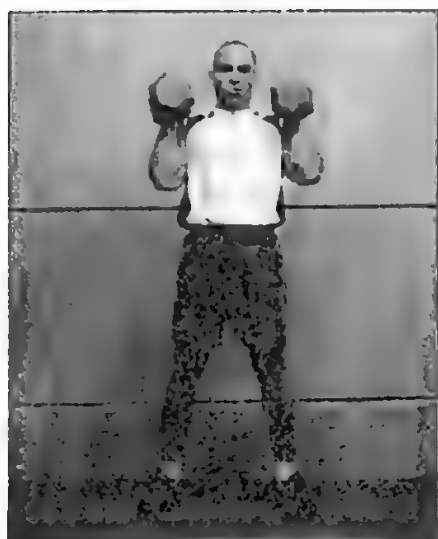
For example, the push press below can be performed with one or two dumbbells. You can move a lot of weight when pressing one dumbbell.

To perform a **push press**, you must first clean the dumbbell to your shoulder. From this position, you will use the legs to produce momentum for the upward press.

You will squat down slightly, and then explode upward, using the momentum from the lower body to help press the dumbbell overhead. In the illustration to the lower right, you can see the receiving position is one with straight legs.



The push press can also be performed with two dumbbells. A strong core is essential for this movement. Keep the core tight as you explode upward.



You can add to the explosiveness of the push press by performing a **push jerk** (commonly called a power jerk). You will begin as if you were performing a push press. As you explode upward, you will receive the dumbbells by *pushing down* under the weight (with a dip in the knees).



It is common for the feet to leave the ground during the push jerk, landing flat-footed in the receiving position.

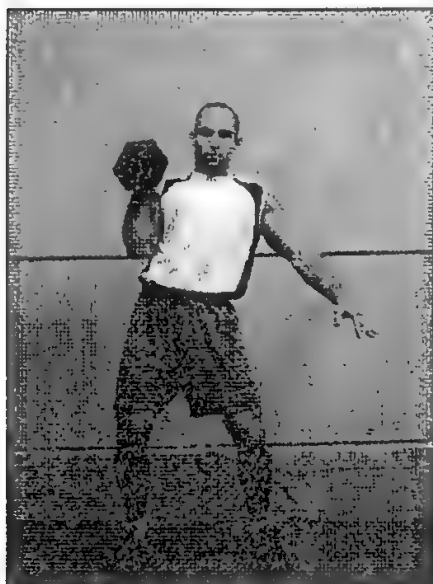
Upon reaching full extension with the hips and knees, the feet will essentially stomp into the ground as you simultaneously push yourself under the dumbbell, into the receiving position.

There is a timing element to this lift. The dumbbell will essentially lock out overhead as your feet are *stomping* into the receiving position.

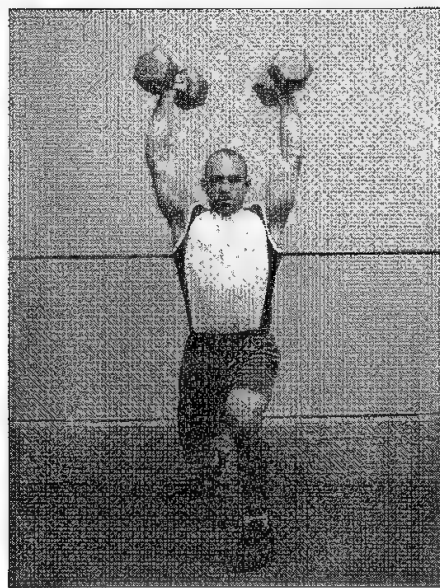
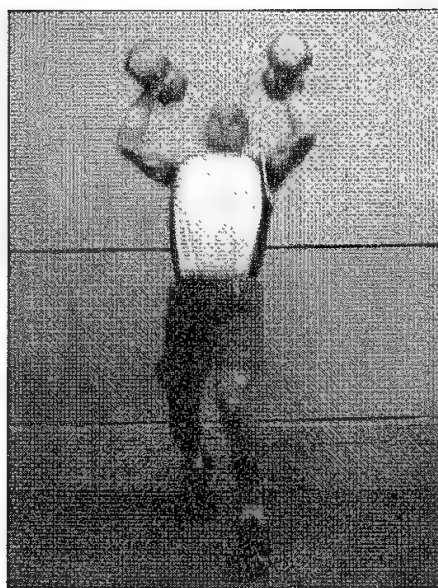
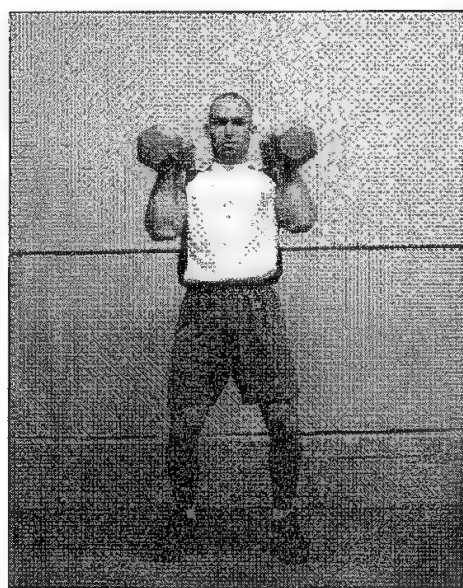
The push jerk can be made more explosive by adding a split receiving position. The overhead portion of the lift is identical to the push jerk. The **split jerk** is differentiated by the split stance receiving position.

As you can see, you will lead with the left foot when pressing with the right arm, and vice versa.

This movement requires more coordination than the traditional push jerk.



As you may have guessed, the split jerk can also be performed with two dumbbells. This variation is illustrated next.



When performing the **two dumbbell split jerk**, you can alternate the lead foot with each repetition.

This movement will require a good deal of balance in the receiving position.

If these movements are new to you, I highly recommend practicing with light loads. You will quickly develop the coordination to perform these exercises with much heavier loads. The learning curve will be much less challenging than a true Olympic lift.



Clearly, there are several overhead variations. Incorporate variety with your overhead work. Do not limit yourself to one lift. Variety is always important.

If you wish to slow things down from these explosive lifts, I recommend the seesaw press, which is illustrated next.

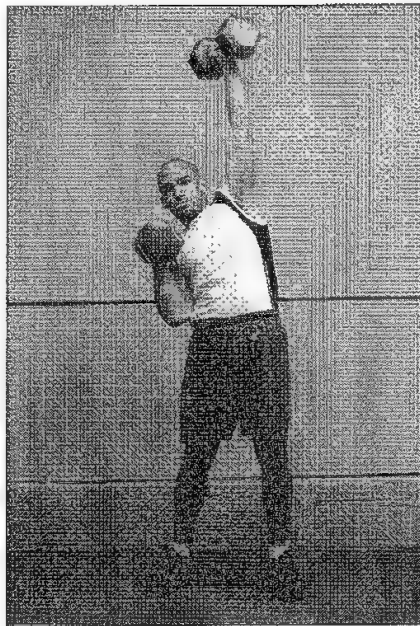
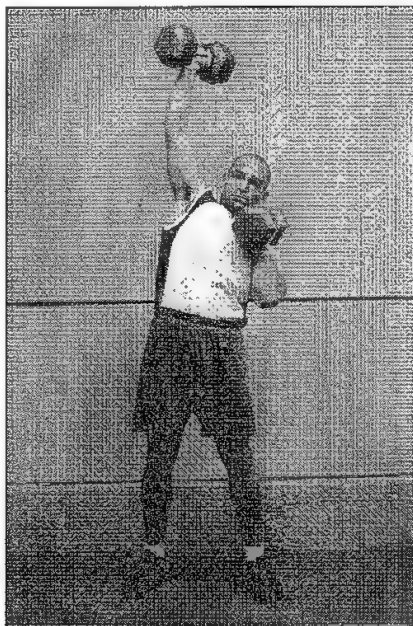
The seesaw press was a popular movement from yesteryear that unfortunately faded into obscurity until recently. This movement is much more challenging than the explosive movements shown earlier in this chapter. You will not be able to move as much weight with this movement.

You will begin with the dumbbells racked by the shoulders, with the palms facing inward. You will press one hand upward, while simultaneously bending from the opposite side. For example, as you press the right arm overhead, you will bend (at the hips) towards the left. As you press upward, you can also slightly twist the hand, as shown below. This will tend to happen naturally as you bend to the side. Once one hand is extended, you will begin pressing from the other hand, while reversing your motion with the upright hand (lowering it back to the starting position).

This movement will develop a powerful core, in addition to the obvious upper body benefits.

When first trying this movement, you will be humbled. It is more challenging than it appears. Do not lose faith however. Former strength athlete Siegmund Klein was known to rep out 100 pound dumbbells with this movement at a bodyweight of 150 pounds.

Stop making excuses and start pressing those dumbbells!



SIMPLE, YET EFFECTIVE

Thus far, we have seen variations of the snatch, swing, and overhead press. You could create a simple, yet effective strength workout with these three lifts. For example, perform the following:

- One of the snatch variations x 5 reps
- One of the overhead lifts x 3 reps
- Dumbbell swing (one or two arm) x 8 reps

Perform these three exercises as a circuit (one after the other). Rest 60 seconds between exercises, and then 90 to 120 seconds between circuits. Complete 3 or 4 circuits.

Finish with weighted pull-ups and weighted pushups. Alternate the two exercises (ex. one set of pull-ups, followed by one set of pushups). Continue until 4 sets of each exercise are complete. Rest one-minute (or less) between exercises.

This sample workout could be performed two days per week. During each workout, choose a different overhead lift, snatch, and swing variation. You can also choose a different pushup and pull-up exercise (see the next chapter for more info).

This brief workout will strengthen the entire body.

ADDITIONAL DUMBBELL MOVEMENTS

The sample above is just one of many options. Obviously, you should not limit yourself to three lifts. Clearly though, one can achieve *a lot with a little*. With just three dumbbell lifts and two bodyweight (plus weight) exercises, you can achieve a quality strength workout.

Fortunately, we are not limited to three exercises. In fact, I recommend much more variety (particularly over the long haul) in your routine.

On the pages that follow, I will show more dumbbell exercises that can be used to spice up your strength program.

I am sure that you are familiar with the bench press, so I will not bore you with the exercise. Personally, I am not a big fan of the bench press. It has never been a staple in my training routine. At one time, I spent plenty of time working on my bench press, but did not notice any significant benefits as a fighter.

While the bench press is not a bad exercise, it is an overused exercise. Everyone wants to know, *"How much can you bench?"* You will not find many people approaching you at the local gym, asking how many times you can snatch a 100 pound dumbbell. The bench press clearly reigns supreme as the most popular commercial gym exercise.

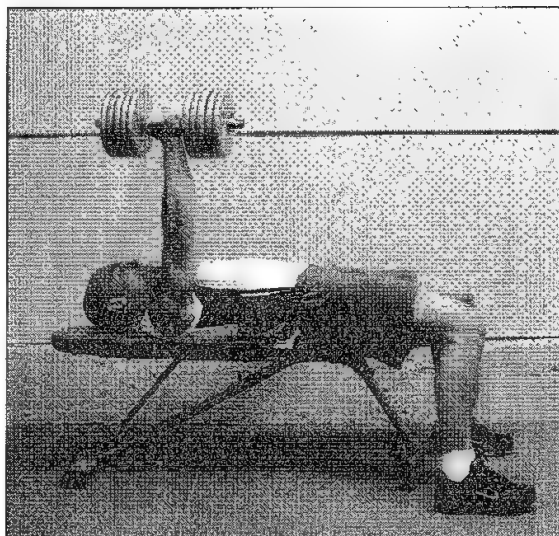
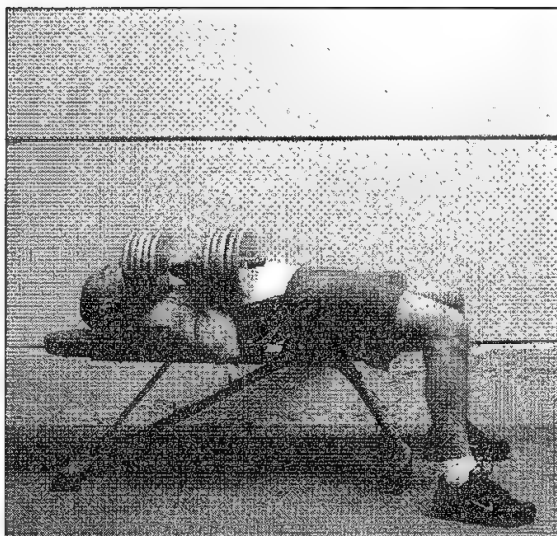
There is nothing wrong with working on your bench press, but do not forget the rest of your body!



One benching exercise that I do enjoy is the **one-arm bench press**. This movement will require balance and core stabilization. When performing this exercise, I press the dumbbells with the palms facing inward. The non-working hand will rest by your hip as you press the weight upward.

In addition to the obvious upper body benefits, this movement will develop tremendous core strength, with particular attention to oblique stability.

When training this movement, start with the non-dominant hand. For example, as a right-handed athlete, I will begin with 5 reps on the left side, followed by 5 reps on the right side. I recommend starting with the non-dominant side whenever training with one handed lifts (ex. snatches and overhead presses).



Our next movement, the **dumbbell shot put**, will generate some unusual looks from the neighborhood soccer moms. The dumbbell shot put is a tremendous movement to build explosive strength. This movement is devoid of deceleration, one limitation of traditional weight training.

Squat down and then explode upward, launching the dumbbell into the air. You will not need to go very heavy for this exercise. A 15 to 30 pound dumbbell should suffice. The shot put motion must be fast and explosive. If you use too much weight, you will not produce enough speed.



When performing the shot put, I train one arm at a time. For example, I will shot put the dumbbell, jog to retrieve it, shot put it again in the opposite direction, and continue. I will work five throws from one side, and then five throws from the other side.

One useful drill involves starting with a set of one-arm pushups (ex. 5 reps), and then following with a set of dumbbell shot puts. The combination of a strength movement (one-arm pushup) and an explosive movement (shot put) is commonly referred to as complex training. Complex training exploits the after-effect of high-tension strength work. Such high-tension exercise renders a positive after-effect in the central nervous system, enabling tremendous increases in strength and speed (Siff, 2003a). Essentially, the explosive movement (ex. shot put) becomes much more effective when performed after the strength movement (ex. one-arm pushup).

The after-effect is powerful and ideal for rate of force improvements.

The isometric punch drills from the next chapter could also be combined with the dumbbell shot put. Start with an isometric punch (strength) and follow with the dumbbell shot put (explosive).

Such drills are particularly effective for punching power development.

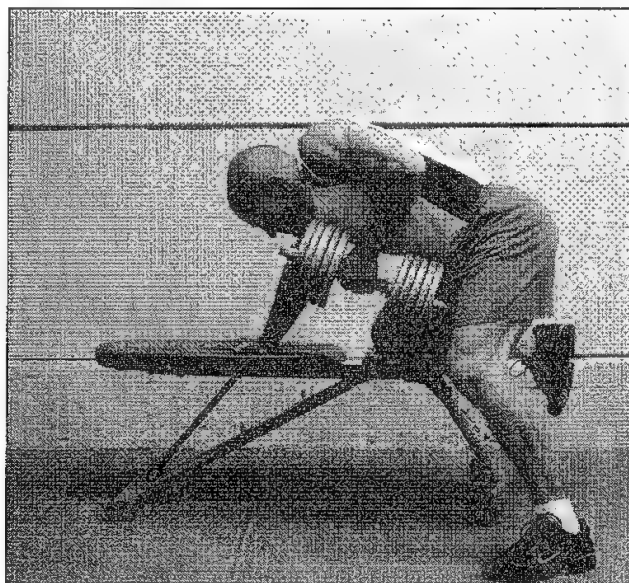
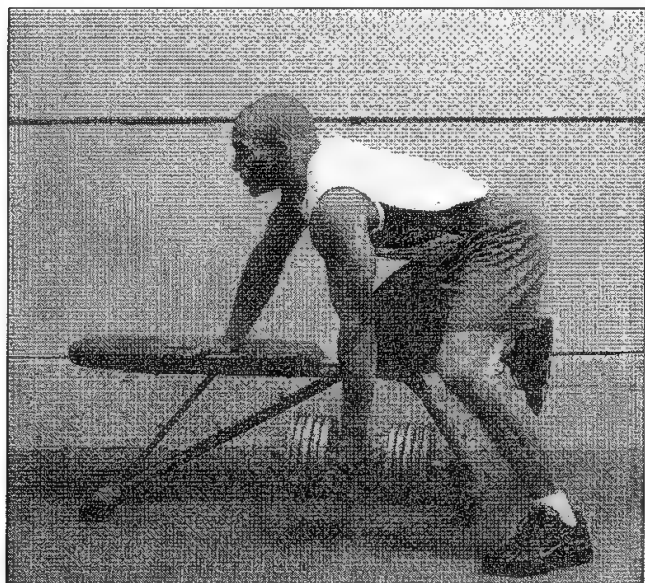


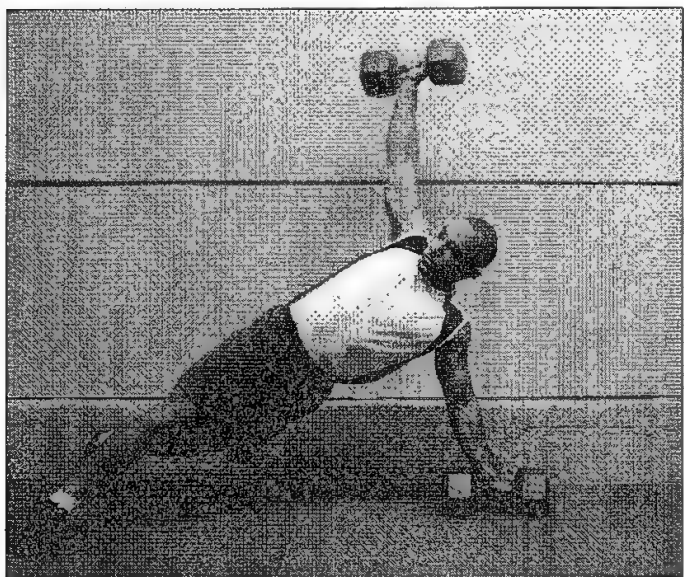
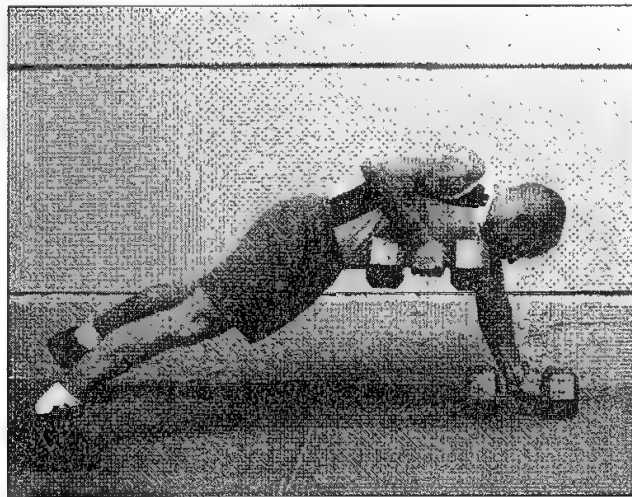
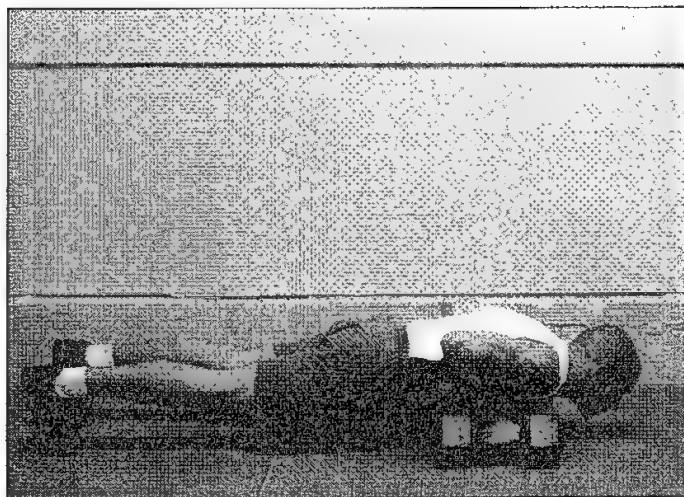
The **bent over row** is another useful exercise. This movement provides an excellent way to train the back. While pull-ups are clearly the upper back exercise of choice, the bent over row is a useful supplement.

To perform this exercise, you will kneel over the side of a bench, with one arm and leg to the side. If you do not have a bench, you can support the right arm on the right leg (when pulling with the left arm). Next, pull the dumbbell up to the side.

Lower the arm until it is extended and continue.

When performing this exercise, focus on flexing hard with the latissimus dorsi (upper back). Do not make this a momentum exercise. Pull the weight under control.





The T-pushup will strengthen the core and upper body.

Start by assuming a pushup position with dumbbells in hand.

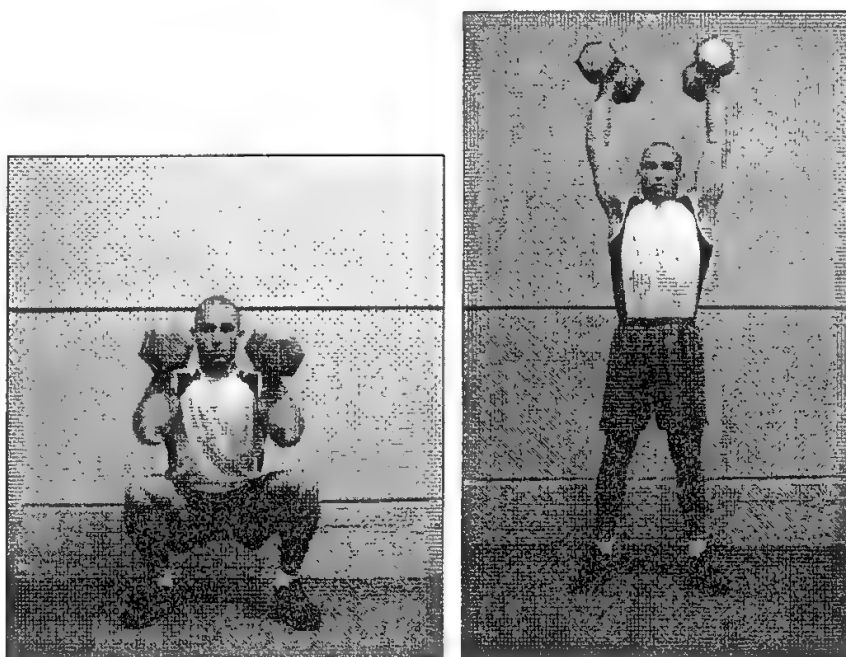
Continue as if you were performing a traditional pushup. As you approach the top position, you will pull hard with one hand, rotating the body at the top of the pull until the dumbbell is extended at arms length. At this point, the body will form the letter "T".

Drop down and repeat with the opposite side. Start with light weights when first trying this exercise.

Let's now look at two tremendous full body movements. We will begin with the **front squat + push press** combination.

You will begin by cleaning two dumbbells to the shoulders. Keep the palms facing each other throughout this movement.

After cleaning the dumbbells to the shoulders, you will perform a squat and continue into an overhead press. There is no pause between the squat and press. The movement is dynamic and coordinated. As soon as the legs have extended, you should be pressing the dumbbells.



The **burpee clean and press** that follows is another effective movement that can serve as a mini-workout.

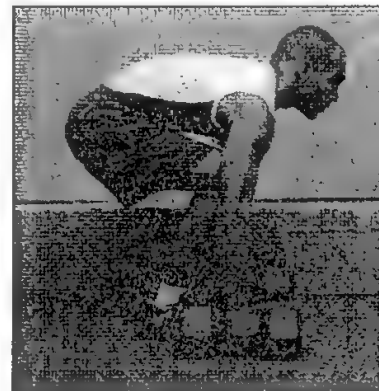
Burpees (discussed in a later chapter) are one of my favorite conditioning exercises. The burpee clean and press will combine the burpee with a dumbbell clean and press. This movement is excellent for strength endurance. I recommend training this exercise with 10 or more repetitions per set.

Squat down with dumbbells in hand. From this position, you will kick the feet out, as you assume the bottom position of a pushup. Next, you will thrust the feet back to the starting position, while simultaneously pushing up with the arms.

From this position, you will clean the dumbbells to your shoulders, and then finish with an overhead press. Immediately return the dumbbells to the ground and continue.

This movement will develop strength and endurance. You will be forced to display strength with the overhead press, while contending with the fatigue that has mounted from the burpee portion of the drill.

If you are strapped for time, this movement is an excellent choice for a brief, yet effective workout.



THE LEGS

It should come as no surprise that the lower body is commonly neglected in many strength programs. The average gym member is only concerned with how he looks with his shirt off. Consequently, the legs are forgotten.

Big mistake!

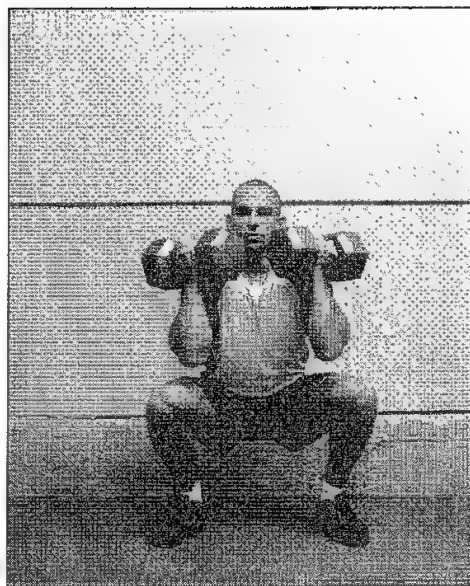
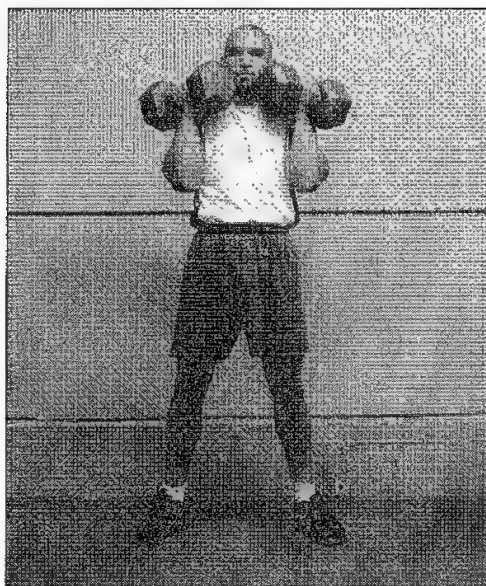
Your legs are your foundation. Without a sturdy lower body, you will never accomplish anything as an athlete.

A fighter needs a strong pair of legs that have tremendous endurance. Although you do not need tree trunk legs, they should be strong and durable. A fighter who develops enormous legs will be forced to compete in a heavier weight class. You must balance lower body strength work with conditioning.

Strengthen the legs as much as possible without gaining excessive mass and without hindering muscular endurance. Fortunately, dumbbells are ideal for training the legs.

The **dumbbell front squat** is an excellent movement. I perform this movement by cleaning the dumbbells to the shoulders. I turn my hands inward, and rest the dumbbells in this position. You should notice that this position is slightly different from the front squat + push press combination that was illustrated earlier.

You will be able to handle heavier loads with the hands turned inward.



When performing the front squat, focus on looking forward. Do not look down, as it may cause you to lose balance and put undue stress on the low back.

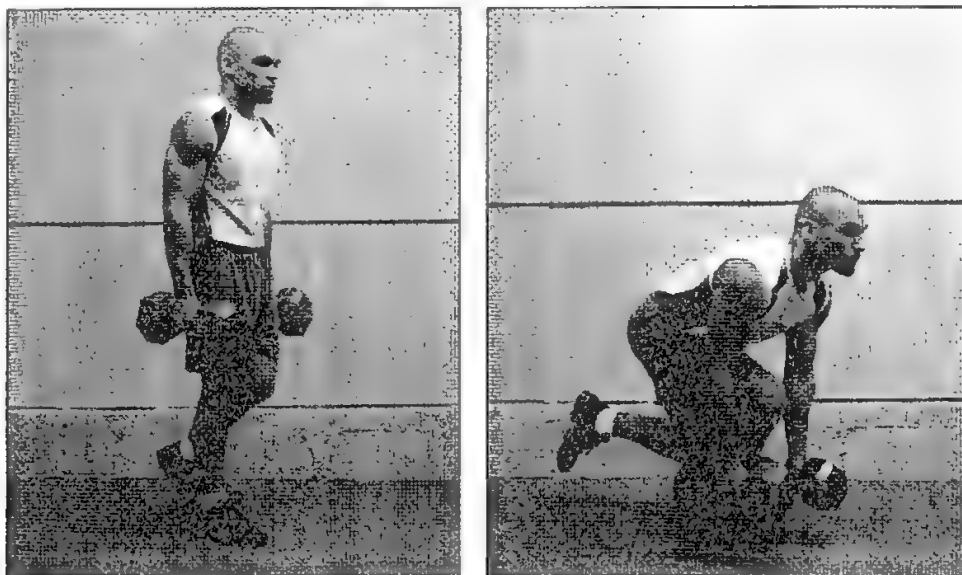
Squat down until the thighs are approximately parallel to the floor. The heels should remain firmly planted on the ground.



Another excellent dumbbell squat movement is the one-legged squat. In the next chapter, you will see the bodyweight version of the one-legged squat. The dumbbell variation is more forgiving to those who struggle with the balance and flexibility aspects of the bodyweight movement, which calls for an extended non-working leg.

For the one-legged dumbbell squat, you will hold the dumbbells in the hang position. Squat down with the heel planted. You should lean forward slightly to assist with balance.

You can work one leg at a time, or alternate between left and right leg.

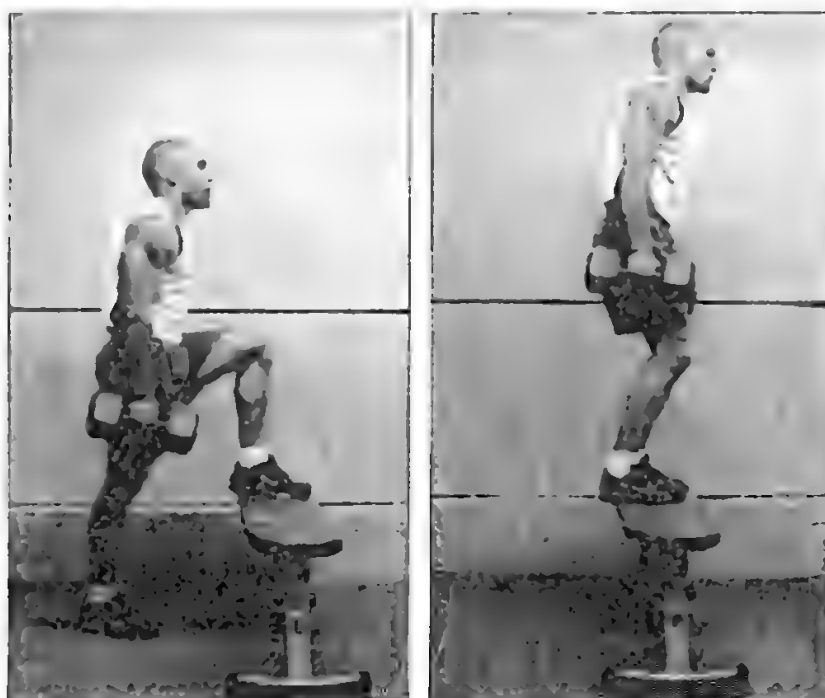


This exercise can be combined with a one leg vertical jump for a useful *after-effect* combination. Start with 5 reps of one-legged squats. Next, you will drop the dumbbells and execute a vertical jump off one foot. Perform three max-effort jumps. You can take a few stagger steps before the jump (as if you were jumping up to a basketball hoop). This combination is effective for vertical jump development.

Another useful unilateral movement is the dumbbell lunge. The lunge is one of the most neglected, yet effective lower body exercises available. To perform this movement, you will lunge forward, landing with the heel first. Lunge forward until the knee of the rear leg approaches the floor. The knee should not touch the floor, but it will come close. Return to the starting position by pressing with the front leg. Continue by alternating legs with each repetition.



The step-up is another excellent unilateral leg movement. You will step one foot onto a bench or secure platform. This foot will remain raised as you step up and down with the opposite leg. The raised leg does not come off the bench until the set is complete. You will then switch legs and work the other side.

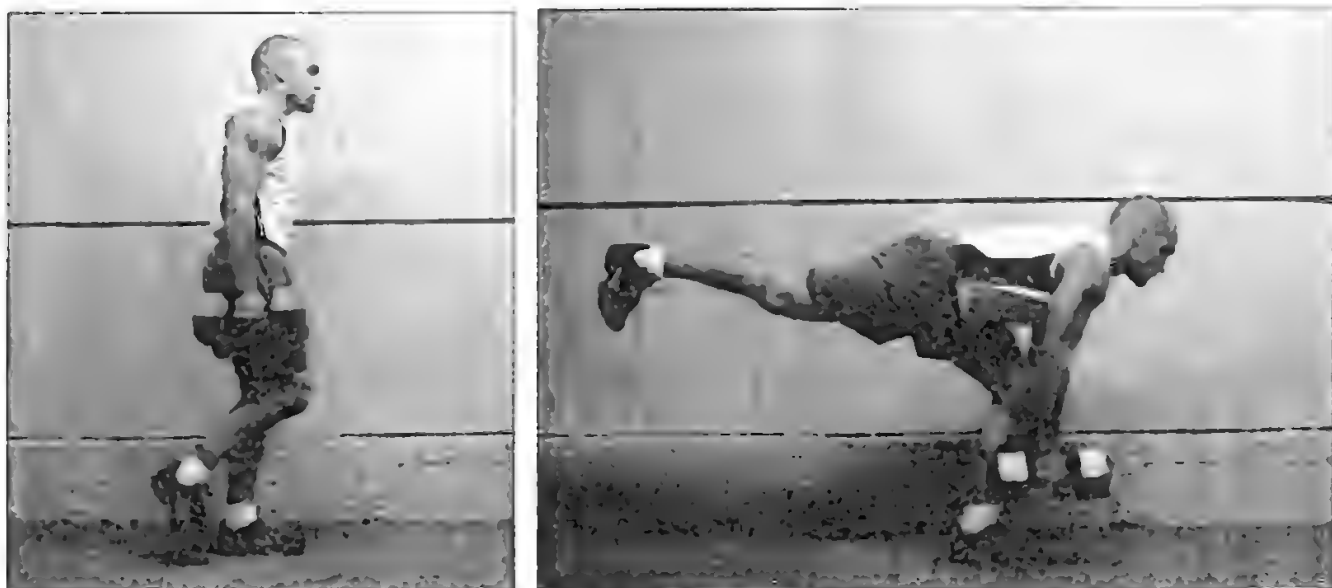


Dumbbells can also be used to perform the **Romanian Deadlift** (commonly referred to as the **RDL**). This movement is an excellent hamstring developer

With the dumbbells held in front of the legs, bend at the hips (not the back), keeping the weights close to the legs. A slight bend in the knees should accommodate this movement.



A more advanced variation can be performed with one leg at a time. The **one leg RDL** is a tremendous movement. For this exercise, I prefer to carry the dumbbells with the palms facing each other. Bend at the hips, while keeping the rear leg extended straight. This movement will strengthen the hamstrings, while improving balance.



The two RDL variations are particularly effective for those individuals who struggle with the bodyweight glute-ham raise illustrated in the next chapter. Direct hamstring work is important, as many athletes focus all of their leg work to quad dominant exercises such as the squat. The rear side of the leg is often forgotten, which leads to muscular imbalances and a higher risk of injury (ex. pulled hamstrings).

Find time for hamstring training!



Now that we have seen several quality dumbbell movements, let's discuss some common questions related to weight training for combat athletes.

Should a fighter lift with high repetitions or low repetitions?

There is no single answer to this question. Different rep schemes will target different objectives. Anyone who suggests that one rep scheme is ideal in all situations does not understand the intricacies of program creation. Those who search for a silver bullet will never find one. It does not exist.

A summary of various repetition ranges is provided below:

- **Strength** = 1 to 5 repetitions per set, with 80 to 100% of the individual's 1 repetition maximum
- **Power** = 1 to 5 repetitions per set, with 70 to 100% of the individual's 1 repetition maximum
- **Hypertrophy** = 8 to 15 repetitions per set, with 60 to 80% of the individual's 1 repetition maximum
- **Muscular Endurance** = 25 to 60 repetitions per set, with 40 to 60% of the individual's 1 repetition maximum.

** Figures cited in Mel Siff's Supertraining (2003a)*

These numbers are estimates, and do not make considerations for various forms of strength (ex. speed strength).

What the figures do show however are a few simple guidelines. Clearly, heavier loads are more suited towards maximal strength development. Lighter loads, lifted for higher repetitions, are more suited for hypertrophy and muscular endurance.

Armed with this knowledge, it becomes much easier to answer the question related to rep ranges. In short, several rep ranges will be included in a complete program. There will be days more dedicated to maximal strength development, with others more dedicated to speed strength, explosive strength, and strength endurance.

More information on this subject will be discussed in the Program Creation chapter.

How often should a fighter lift weights?

“Lifting weights” is a general phrase. I prefer to describe workouts based on specific objectives. For example, a core training routine may include resistance exercise and bodyweight exercise. Weighted core movements are not what most envision when they think of *lifting weights*.

Strength training is a more descriptive phrase. Usually, a fighter does not need more than 1 to 3 strength sessions per week. Much of the fighter’s time will be dedicated to skill training (ex. sparring, partner drills, one-on-one instruction) and conditioning drills. Too much strength work will detract from these sport-specific requirements. Numerous strength workouts per week will deteriorate the recuperative powers of the body. To become a weight room monster does not mean that you will become a monster inside the ring. Much of your time must be dedicated to skill work. Skills pay the bills, and the iron does not hit back.

Furthermore, our strength training workouts will not be limited to free weights. Strength workouts will also include bodyweight exercise and unconventional modalities such as heavy sandbags. We will focus on objectives, not specific training tools.

How long should I rest between sets?

Rest periods will also vary, depending on the routine and objective being targeted. For example, the sample training program provided in a later chapter, includes several conditioning drills that mix free weights with bodyweight exercise. Many of these drills require extended work periods (ex. 1 to 2 minutes of non-stop exercise), followed by brief rest periods (ex. 30-60 seconds).

By reducing rest between sets, an accumulation of blood lactate will occur. The athlete will therefore develop increased tolerance to such acidic conditions. This is particularly important for anaerobic athletes such as fighters. As a fighter, you have 1-minute of rest between rounds. Regardless of the pain and fatigue that

amasses, you must answer the bell after 1-minute. There are no timeouts in the combat sporting world.

When training for strength and power, rest periods will often extend beyond 1-minute. Advanced athletes working with maximal loads may need 3 to 5-minutes of rest between sets.

Lengthy rest periods are also recommended between complex training (strength movement + explosive movement) sets.

To summarize, rest periods between sets will vary depending on the specific strength quality being trained.

Furthermore, one way to make better use of time is by sequencing exercises so that one movement will not fatigue the muscles required in the next movement. For example, you could perform one set of overhead presses, followed by one set of front squats. By sequencing exercises in this manner, one is able to improve strength, with less attention directed towards hypertrophy (Zatsiorsky, 1995). In addition, you will be able to perform more work, while minimizing fatigue and idle rest. Recovery between sets occurs much faster when different muscles are targeted.

How often should I change exercises?

It is important to incorporate variety into your strength training program. Failure to incorporate variety will lead to adaptation to a particular movement. Over a long period of time, performance gains will gradually plateau and even decrease. Do not limit yourself to a handful of exercises. Variety is important to continue a positive training response. Remember, you are not training to become proficient with one exercise (ex. bench press). You are training to become a more dominant athlete. Limiting yourself to one exercise will not assist with this goal.

I have heard a lot about the method of maximal effort and the method of dynamic effort. What exactly are these methods?

The dynamic effort and maximal effort are two of the three methods that Zatsiorsky describes to achieve maximum muscular tension. These methods have been popularized by Louie Simmons, celebrated powerlifting athlete and coach, and owner of the famous Westside Barbell Club in Columbus, Ohio. Simmons has applied these methods through a conjugate periodization plan to create many of the strongest athletes in the world.

Definitions are provided on page 56.

Maximal Effort - This form of lifting involves exercising against maximal resistance. Low reps are used against near-maximal or maximal weights.

Dynamic Effort - The method of dynamic effort involves lifting a nonmaximal load with the highest attainable speed. This method is used to improve rate of force development and explosive strength. Examples of dynamic effort training include lifting sub-maximal weights at top speed and the use of plyometrics. Complex training drills are also useful for the development of rate of force.

Repeated Effort Method - The method of repeated effort involves lifting a nonmaximal weight to failure. During the final repetitions in the set, the muscles develop maximum force in a fatigued state.

The strength program in this book will be based primarily on the methods of maximal effort and dynamic effort. Maximal effort training will include weight training and bodyweight exercise (ex. isometrics).

The dynamic effort will be utilized through plyometrics, complex training, and various high-speed lifts.

Plyometric pushups (shown in the next chapter) are an excellent choice for the development of explosive strength. One of the limitations of weight training is the deceleration that takes place at the end of the lift (as mentioned when discussing the dumbbell shot put).

One test of speed reps on the bench press showed that power decreased substantially during the last 50% of the range of motion, as the lifter had to slow the bar to avoid launching it into the air. The decreased rate of acceleration was "due to decreased agonist activation and increased antagonist activation of muscles of the upper back, which actually created a pulling force on the bar to decelerate it because it had to be at zero velocity at arm's length" (Kraemer and Fleck, 2004).

Movements such as the shot put throw and plyometric pushup overcome this limitation. You are able to explode throughout the movement, with no need for deceleration. As a fighter, deceleration lacks specificity. Do you decelerate your punches as they approach your opponent? I sure as hell hope not! Fighters are trained to *punch through* their opponent.

A program that improves rate of force will improve this ability.

Should I strive to go heavier and heavier each week?

You can only add weight for so long before burnout. You must include time for restoration, which means including back-off weeks where loads are reduced. Research has shown that optimal progress occurs when you alternate periods of increased loading with periods of decreased loading. Continual increases in weight can lead to overtraining, staleness, lack of motivation, and a higher risk of injury (Siff, 2003a).

Additional information related to this topic will be discussed in the Program Creation chapter.

FINAL THOUGHTS

To conclude this chapter, I will close with a few tips that you can apply to your strength workouts.

1. Perform strength workouts when the body is fresh. You will realize much greater strength gains if you exercise when the body is fresh, not fatigued.
2. Determine rest periods based on the specific objectives being trained (ex. maximal strength workouts will require greater rest periods than strength endurance workouts).
3. Focus on quality over quantity. A quality strength workout should not require too much time on the clock. Most strength workouts will be completed in less than 1-hour (often much less).
4. When conducting a strength workout, start with power-centric lifts (ex. snatch and clean and press.) Finish with slower, less technically demanding movements.
5. Train the largest muscle groups first, then smaller muscle groups.
6. Always search for new ways to incorporate variety into exercise selection. Do not limit yourself to a handful of movements.

MASTER YOUR BODY

"He who conquers others is strong; he who conquers himself is mighty." - Lao-tzu

Imagine a training modality that was free, effective, and always available. You could use this tool indoors, outdoors, on the road, and anywhere else your journey takes you. Sounds too good to be true, right?

Wrong!

Such a training tool does exist. Fortunately, we all possess this tool, otherwise known as the body. The human body is the ultimate resistance device.

The infinite intensity approach to fitness emphasizes the development of a complete athlete. Weightlifting strength alone does not fit the bill. Consider the individual who can bench press impressive loads, yet struggles to pull his bodyweight over a chin-up bar. In my eyes, this individual is not *in shape*.

If you cannot maneuver your bodyweight, how can you expect to excel on the battlefield? Will you compete with a weight set strapped to your back?

One of the latest fitness buzzwords is *functional strength*. Although the term has been overused, we can still benefit from a simplified definition. *Functional strength* is simply strength that is both useful and purposeful. How useful is your strength if you cannot pull your bodyweight over a bar? You either lack strength, or are carrying too much weight.

We will correct these problems.

This chapter will focus on strength based bodyweight movements. These exercises will be performed in conjunction with the dumbbell movements from the previous chapter. We will also discuss various bodyweight conditioning drills in a later chapter.

Each piece of the puzzle will then be organized into a complete program, addressing all aspects of strength and conditioning.

Let's begin...

Well, not so fast. I can already hear some readers mumbling the following:

"But Ross, you can't get strong with bodyweight exercise."

Before we begin, let's smash this myth to pieces with a sledgehammer.

When someone utters this statement, I typically respond with a few questions of my own.

Can you perform a one-arm chin-up? Can you perform elevated handstand pushups? Can you climb a 25-foot rope? Can you perform one-legged squats?

I am guessing that 99 out of 100 members at the local commercial gym would struggle to perform at least one (perhaps all) of these exercises.

Bodyweight exercise is the most convenient form of training. There is no reason to choose between weight training and bodyweight exercise. The two training styles complement each other within a complete program.

Rather than choosing one training style, incorporate several methods into an ever-changing arsenal. Target specific objectives, and choose the appropriate movements to achieve specific goals.

I often receive questions from athletes who wish to integrate weight training and bodyweight exercise into a weekly program. Many of these athletes assume the two training styles must be separated.

Who is to say that one routine cannot integrate weightlifting and bodyweight exercise?

Do not focus on a specific piece of equipment (or lack of), focus on specific objectives. For example, if you were training to improve muscular endurance, you could perform high repetition movements with your body (ex. pushups) or you could perform high repetition lifts (ex. high rep dumbbell swings).

If you were training for strength, you could lift heavy weights or use more strenuous bodyweight exercises. Trust me, a one-arm chin-up offers a clear demonstration of strength.

Resistance is resistance, whether it comes from iron or natural bodyweight. Do not worry about **what kind** of resistance you use. Rather, focus on **how** you use the given resistance.

For example, suppose you wanted to increase strength in the shoulders. **Athlete A** chooses to perform overhead presses with a heavy dumbbell. **Athlete B** chooses to perform elevated handstand pushups while wearing a weighted vest.

Which athlete receives the superior workout?

This question is impossible to answer. The two exercises offer similar, yet unique benefits. Rather than limiting yourself to one or the other, I recommend that you incorporate both movements in your training program. A strength workout can include bodyweight exercises and weightlifting exercises. I constantly mix and match my workouts to include several training modalities. My training programs are designed to target objectives. If a certain training device offers benefits, I will be sure to include it. There is no reason to apply the all-or-nothing approach to program creation.

To conclude, I have provided a sample strength workout that is simple, yet effective. As you can see, this program is not *equipment-centric*. Rather, this program is *objective-centric*, with an emphasis on total body strength development.

Sample Strength Workout

- | | |
|--|------------|
| 1. One Arm Dumbbell Snatch: | 4 x 5 reps |
| 2. One-Legged Squat: | 4 sets |
| 3. One Arm Dumbbell Clean and Press: | 4 x 4 reps |
| 4a. Weighted Pull-ups: | 4 sets |
| 4b. Weighted Pushups between 3 chairs: | 4 sets |
| 5. Glute-ham Raise | 4 sets |
| 6. Farmer's Walk finisher: | 3 sets |

Workout Notes

- Exercises 2, 4a, 4b, and 5 are not performed for a specific number of reps. The athlete stops 1 to 2 repetitions short of failure. For example, if you can perform 5 weighted pull-ups, stop at 3 or 4 reps.
- Exercises 4a and 4b are alternated. For example, perform one set of pull-ups, rest, and then proceed with one set of pushups. Continue until 4 sets of each exercise are complete. Rest one-minute between exercises.
- Exercise 6 will be explained in a later chapter.

This brief sample offers one way to integrate bodyweight exercise with weights. The objective of this workout is strength development. Both methods of training are used to achieve this goal.

PULL, PULL, AND PULL SOME MORE

Let's now turn our attention to several strength building bodyweight exercises, starting with the almighty pull-up.

I have started with pull-ups for one reason, to stress the importance of this movement. Pull-up strength is a rare commodity at gyms today. It is unusual to hear someone at the gym bragging about his ability to perform 20 pull-ups. It is much more common to hear the modern gym rat bragging about an impressive bench press.

For some strange reason, the bench press is the only exercise mentioned when discussing upper body strength. It is as if today's athletes have forgotten about the huge amount of muscle potential in the back. No one wants to train the backside of the body.

Think about abdominal training. You could go to almost any gym in the world and find a "fitness class" working through various abdominal crunches. Everyone wants to crunch, but no one wants to train the opposing muscles of the low back.

Move up the body to the chest. Everyone wants to bench, but no one wants to train the opposing muscles of the upper back. For the rare few who do train the back, they are happy to perform a few sets on the glistening lat pull-down machine. What could be less functional than sitting down while pulling away at a carefully calibrated machine?

But wait, we are not finished yet. Move down the body to the legs. Everyone wants to squat, but no one wants to train the hamstrings.

Perhaps our society is mirror crazy. If they cannot see the backside, why train it?

Well, the hell with this mindset. We are not training for a mirror posing session. We are training for function, performance, and a lifetime of ass kicking.

Now, before I discuss the specific exercises, let's destroy one last misconception about pull-up strength.

This section is dedicated to those readers who utter the following words:

"I can't do pull-ups because I'm a heavyweight..."

Fortunately, I have never seen a pull-up bar discriminate against anyone because of race, gender, or size. I can perform pull-ups wearing a 100 pound weighted vest. Stop making excuses and start pulling on the bar. If you need motivation, consider the feats below.

- Former super heavyweight weightlifter Vasily Alexeyev could perform over 30 pull-ups at a bodyweight of over 300 pounds.
- Wrestling legend Bert Assirati could perform one-arm chin-ups while tipping the scales at almost 250 pounds.
- Former bodybuilder Marvin Eder performed 80 consecutive chin-ups at a bodyweight of almost 200 pounds.
- Famous strongman Eugene Sandow could perform one-arm chin-ups with one finger!

THE SECRET

What is the secret to pull-up strength? How did these men perform such incredible feats on the pull-up bar?

Fortunately, there are no secrets. If you want to improve your pull-up prowess, get on the bar and start pulling. The most common reason for the modern athlete's inability to perform pull-ups is their failure to train with this movement. I've seen more wet towels hanging from pull-up bars than athletes.

Another common problem is the extra weight that so many individuals are carrying on their body. At one end of the spectrum, we have the obese members of the gym. Let's be honest, extra body fat is not helping with anything, except perhaps sumo wrestling. It is time to pick up the conditioning work, improve body composition, and improve athletic performance.

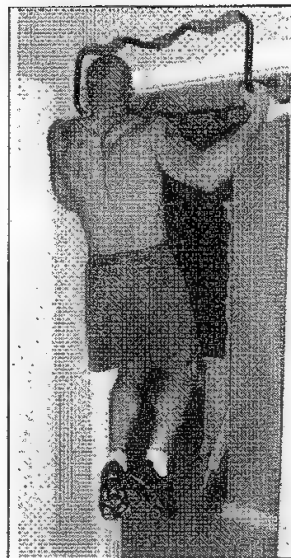
At the other end of the spectrum are those *hypertrophy freaks* who pack on pounds and pounds of unfunctional muscle mass. These muscle heads may look big in the mirror, but what happens when shit hits the fan during competition?

Stay functional, pull from the bar, and stop wasting time in front of a mirror!

PULL-UP TIPS

1. Find time for pull-ups.
2. Buy a pull-up bar. You can buy a doorway bar that does not require any bolts or screws. There will be no damage or changes to your door entrance. The bar simply hangs from the door jam. In the illustration to the right, I am performing the side-to-side pull-up. There is no reason to leave the house for a pull-up workout!

Another option is to buy a dip and pull-up station. You can buy a "power tower" for around \$100 at many sporting good stores.



3. Work with several pull-up variations. Don't limit yourself to one pulling style.
4. Constantly seek new methods of progression. Examples include adding weight via a weighted vest or weighted backpack, performing more difficult variations such as towel pull-ups, training for one-arm pull-ups, performing muscle-ups from a pair of playground rings, and climbing rope for speed.
5. If you are unable to perform one full repetition, start with static holds from the bar. Hoist your chin over the bar and hold the position for 3 to 5 seconds. Lower yourself a few inches, stop, and hold for another 3 to 5 seconds. Continue this pattern until the arms hang straight. Remount the bar and continue for several repetitions. Gradually increase the duration of each hold. Continue with this style of training until you can perform full repetitions.
6. Exploit the convenience of bodyweight exercise. The greatest benefit of bodyweight exercise is its convenience. I perform several mini-workouts throughout the week, consisting primarily of bodyweight exercise. For example, I'll get out of bed and perform a few sets of pull-ups, handstand pushups, and one-legged squats. I won't work to failure, rather I'll just perform light sets of each exercise to help *wake up*. It only takes a few minutes, and the benefits will be monumental. By adding bits and pieces

to your daily schedule, you can make considerable gains in strength and work capacity.

7. In case you have forgotten, find time for pull-ups!

PULL-UP EXERCISES

Let's now look at several pull-up exercises.



The most common variations include the **pull-up** (palms facing away) and the **chin-up** (palms facing you).

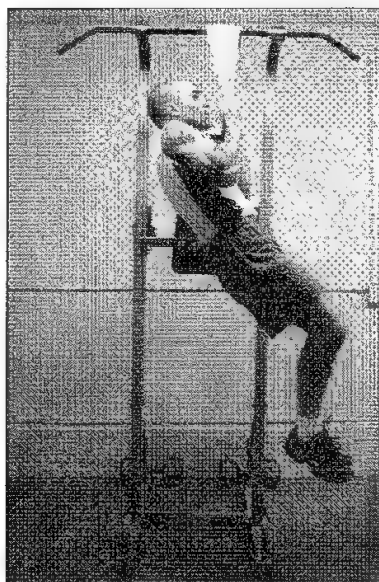
These are excellent exercises to begin your pull-up journey.



Towel Pull-ups are another excellent variation.

Drape two towels over the pull-up bar. Grab the towels firmly and perform a full range pull-up.

This variation is excellent for grip strength. The thicker the towel is rolled up, the more difficult this move becomes.



You can also perform this exercise with one towel. Assume a sideways stance with the bar. Grab one end of the towel with each hand.

You could also use a rope for this exercise. Simply drape a rope over the bar, instead of the towel.

For a greater challenge, you can wear a weighted vest when performing these exercises. A weighted vest is a perfect addition to any pull-up routine. For a low budget alternative, you can use a backpack filled with small sandbags.

The extra weight of the vest (or backpack) will shift your emphasis from muscular endurance to pure strength development.

I recommend that you first become proficient with bodyweight pull-ups before adding weight (ex. 10 to 12 reps with bodyweight). You can then begin working with lower reps while wearing the extra weight. Start with 10 pounds and gradually work your way up. Many weighted vests are adjustable up to 50 pounds or more. Cranking out repetitions with an extra 50 pounds will pose a considerable challenge to most athletes.

RAISING THE BAR

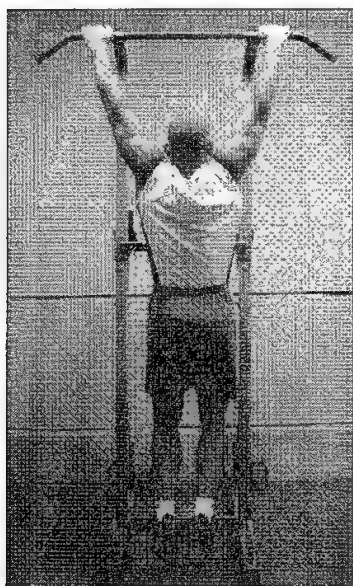
When you become proficient with weighted pull-ups, there is still plenty of room for progression. A one-arm chin-up (or pull-up) is a tremendous demonstration of strength. Few athletes can perform unassisted one-arm chin-ups. This exercise will take a long time to master.

I began training for one-arm chin-ups while looking for new ways to spice up my workout. Usually, you will need to train specifically for this exercise. There are plenty of incredibly strong athletes who cannot perform the one-arm chin-up.

Depending on your current strength and body composition, this exercise will usually take between a few months, to as long as a year or more to achieve. I would **not** lust over the one-arm chin-up, but there is nothing wrong with adding a new challenge to your weekly training program. Please note however that you must be prepared for the long haul. You will not achieve this goal overnight. If you push too hard, too soon, and too often, you will be asking for elbow pains. Take your time, and do not limit yourself to one-arm training. There will always be plenty that you can do with both arms.

Achieving a one-arm chin-up is not a necessary feat for successful athletes. It is simply a new way to challenge yourself towards achieving a difficult goal. You should be able to perform at least 15 to 20 bodyweight chin-ups before training for this exercise. Many of the preparatory training exercises are very challenging. You must have a solid foundation before attempting these movements.

The **side-to-side pull-up** is a great starting point.



To perform this exercise, you will start with a slightly wider than normal grip on the pull-up bar. You will pull to one side at a time. Focus on using one arm at a time.

For example, when pulling to the left, you will attempt to perform as much of the work as possible with only the left hand. Minimize the use of the opposite side.

Pull your chin up towards the hand, as you can see in the illustration above. Alternate between the left and right side. A set of 12 repetitions would include 6 pulls to the left and 6 pulls to the right.

This exercise is excellent whether you are training for a one-arm chin-up or not.

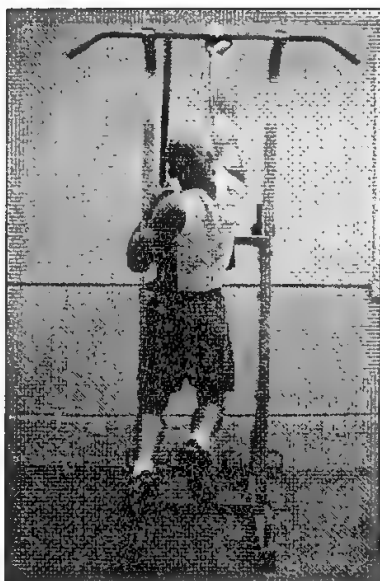
The **assisted one-arm chin-up** on page 67 is another excellent movement. I learned this exercise from a local rock climber. This man could crank out one-arm chin-ups like a walk in the park.

To perform this exercise, you will need to drape a towel or belt over the chin-up bar. One hand will hold the belt, while the other holds the bar. The hand on the bar will perform as much work as possible when executing the upward pull.

You should gradually lower your hand position on the belt or towel. You could start a few inches from the bar, and eventually lower the hand 18 to 24 inches from the bar. As you lower this hand, it will be less able to assist the hand that hangs from the bar.

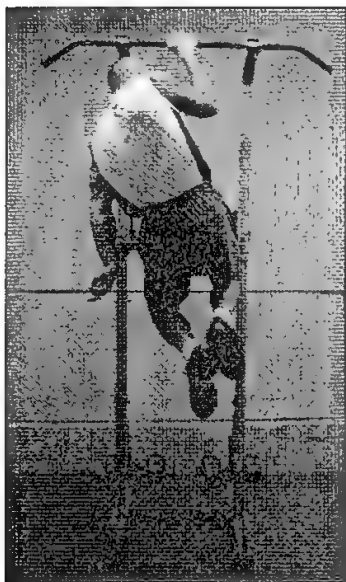
As you can see below, my left hand grabs a belt while my right hand pulls on the bar. I minimize the involvement of my left hand, trying to pull solely with the right hand.

This is a strenuous exercise, best performed with low repetitions.



When you become proficient with this movement, you can start working with one-arm eccentric drops from the bar.

Please note that you can perform these exercises with a pull-up or chin-up grip.

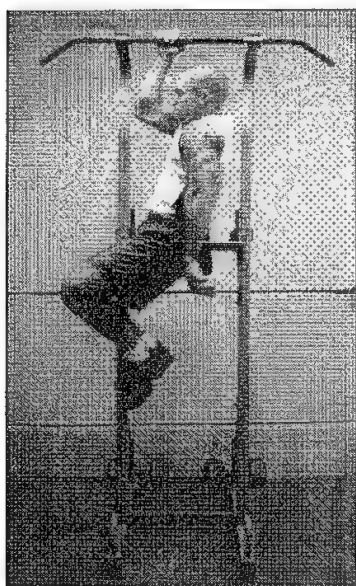


The **one-arm eccentric drop** is a difficult exercise. You will start by performing a traditional two-hand pull-up. Upon reaching the upright position (chin over the bar), you will remove one hand from the bar and slowly lower yourself until the arm hangs straight.

Remount the bar with both hands. Pull yourself back to the top of the bar, and switch hands. For example, start by lowering yourself with the right hand, and then continue by lowering yourself with the left hand.

This exercise will quickly build strength.

In addition to the obvious strength benefits, these movements will also build balance and coordination. Balance is one of the most difficult elements of the one-arm chin-up. As you pull, it is natural for the body to begin spinning to the side. You must develop a good sense of balance and body awareness to prevent this motion on the upward pull. These exercises will assist with this objective.



Moving right along, one of the more difficult chin-up exercises is the **one-arm static hold**. This exercise is more difficult than the one-arm eccentric drop. Rather than lowering yourself from the bar, you will halt the downward motion with a static hold.

This exercise is best performed with a sideways stance to the bar. You will pull yourself up with both hands. Release one hand and lower yourself a few inches from the bar. Hold this position for a few seconds. One-arm static holds are very difficult. If you have never tried this exercise, be prepared for a challenge.

As you become proficient with a mid-range hold, you can begin training different angles on the bar.

For example, you could integrate the one-arm eccentric drop with the static hold. Lower yourself a few inches and hold the position for a few seconds. Continue by dropping another 2 to 3 inches, and hold this position. Continue this pattern until your arm hangs straight.

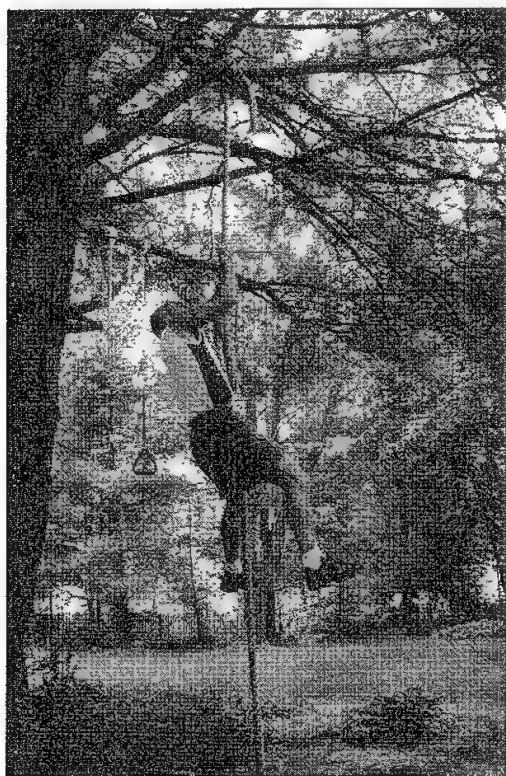
The combination of eccentric drops and static holds are tremendous for strength development. I simply caution you against performing these exercises without the necessary strength foundation. Progress takes time, so be prepared for the long haul.

ROPE CLIMBING

Rope climbing offers another excellent way to increase pulling strength. Rope climbing is fun, functional, and beneficial.

I recommend using a manila rope for climbing. Manila is nice on the hands, and ideal for gripping. Common thicknesses for climbing ropes are 1.5 or 2 inches.

You probably used a manila rope as a youngster in physical education class.



I can remember climbing rope as a young boy. Rope climbing was always fun, although I had no idea how instrumental it would become in my future as a trainer. The rope has become one of my favorite training tools.

If you have tall trees in your yard with sturdy branches, I highly recommend the addition of a rope. A length of 15 to 25 feet is ideal for most situations. Be sure to use a sturdy tree branch, and a securely tied knot.

When climbing the rope, you will receive a tremendous grip strength workout. Attempt to climb the rope without any assistance from the lower body.



Reach up high with each arm, maximizing your wingspan. Focus on pulling with one arm at a time.

If your rope is not very long, you can extend your legs out in front of you, as your body will resemble the letter "L".

In addition to challenging the core, you will add a few feet to your rope climbing range.

If you start from the standing position, you will automatically knock off 5 or 6 feet from your climbing range. By extending the legs, you gain an additional 2 to 3 feet. Start with your butt on the ground, and begin climbing.

I highly recommend this variation.



If you really want a challenge, you can climb two ropes at a time.

Each hand will grab one rope. You will pull with one hand at a time. Minimize the involvement of the bottom hand. For example, pull hard with the left hand, and then pull hard with the right hand.

This variation becomes much more challenging when you extend the distance between the two ropes.

It will not take long for you to realize the carryover that this exercise has to one-arm chin-ups. You will essentially be climbing the rope with one hand at a time.

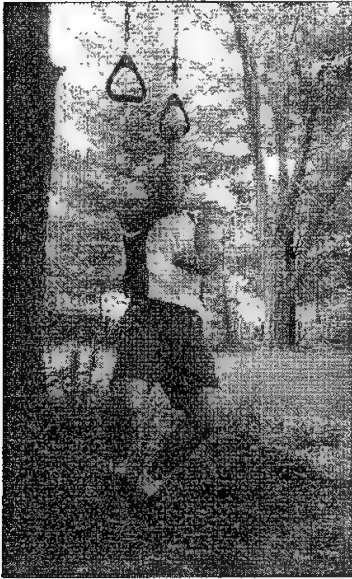
If you have room for two ropes, you will double the fun with this exercise.

PREPARING FOR THE ONE-ARM CHIN-UP

If you have room for a climbing rope, you likely have room for a pair of playground rings. You could also choose more expensive gymnastic rings. Usually, this will not be necessary however.

I bought a pair of playground rings for \$17 at a local hardware store. A company named Playstar produces the rings. These rings have a 350 pound weight rating. They are durable and effective.

I extended the reach of the rings by tying them to a towing rope. I then tied the rope around a sturdy tree branch. While this set-up is not designed for true gymnastic training, it has worked well for my needs. I am not a gymnast, nor do I pretend to be. I simply use the rings as a way to spice up my training routine.

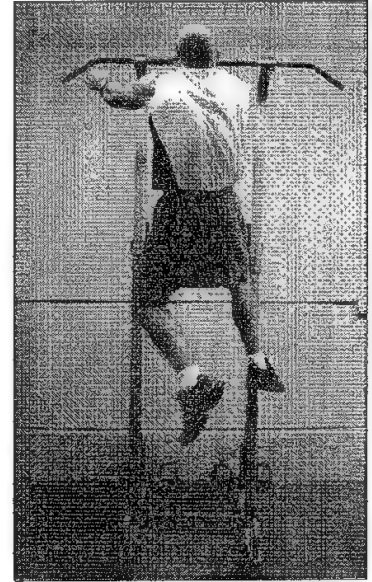
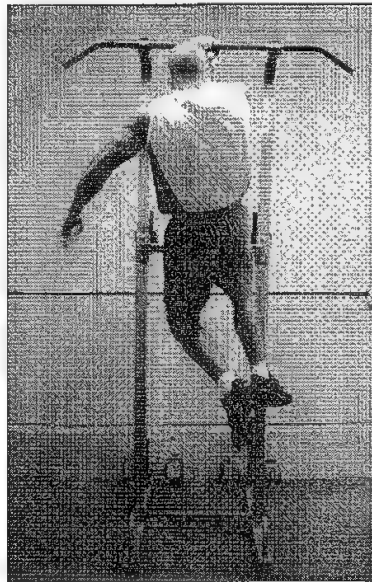
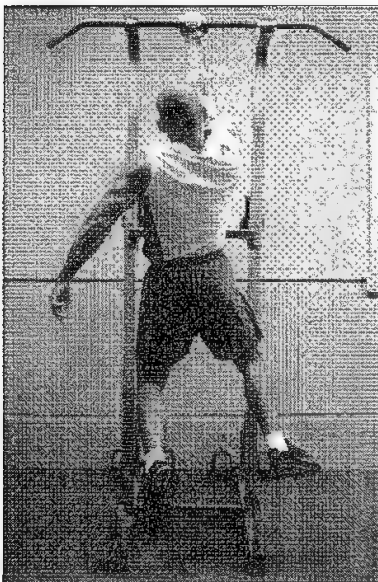


I found the rings to be particularly useful when training for the one-arm chin-up. When training this movement on the rings, there is no need to balance yourself in line with a pull-up bar. You can focus solely on the strength component of the movement.

Once you are able to perform full repetitions on a ring, you can begin training the movement from a pull-up bar. The pull-up bar will be more difficult, as you must contend with the element of balance.

When performing this movement from a pull-up bar, I use my non-working hand to assist with balance. The non-working hand tends to perform a balance role without conscious thought.

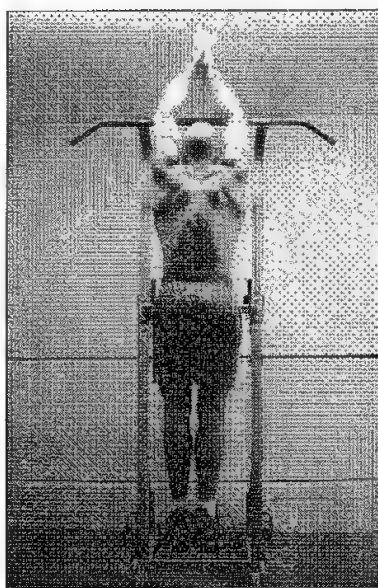
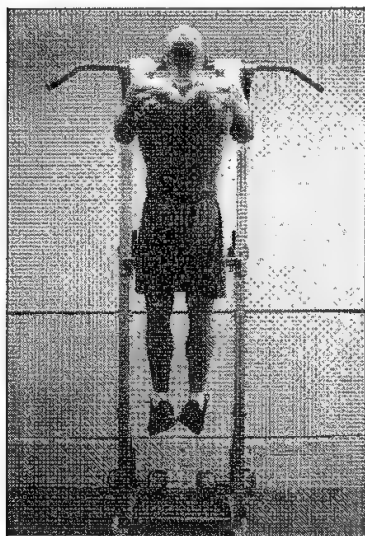
The **one-arm chin-up** is an elusive goal that evades most athletes. If you are looking for a true challenge, hop on your pull-up bar and start pulling.



GETTING EXPLOSIVE ON THE BAR

One-arm chin-ups are just one of many challenges available on the pull-up bar. Other common challenges include performing 20 or more bodyweight pull-ups or performing pull-ups with an extra 50 or 100 pounds strapped to your body. Each feat offers a unique challenge.

If you are looking for another way to spice up your pull-up routine, consider adding the **clap pull-up** to your arsenal.



This variation will require an explosive upward pull. As your chin approaches the bar, you will lift the hands upward above the bar, perform a quick hand clap, and then catch the bar on the downward fall. This entire motion takes place in a split second.

This exercise requires speed, strength, and coordination.

MUSCLING YOUR WAY TO THE TOP

Another challenging pull-up movement is the **muscle-up** from a pair of rings. This movement is not entirely a pulling motion however, as it integrates the pull-up and dip together. By performing this movement, you get the best of both worlds, and then some.

To perform a true muscle-up, you must first start by learning the false grip. When gripping the rings, you will rest the base of your palm on top of the rings. This gripping style will allow you to achieve superior leverage, as you are able to push from the palm of the hand. In doing so, you will be able to make a smoother transition from the pulling motion to the dip.



Begin by pulling your chest up towards the rings. As your chest approaches the rings, you will lean the body forward, transitioning into the dip position.

This transition must be quick and smooth. Your shoulders will essentially *roll over* the hands, as you lean forward into the bottom portion of the dip. From here, you will simply press upward, locking the arms out on top.

You must then lower yourself to the beginning position, and continue.

The most difficult portion of this movement is the transition from the upward pull, to the dip. Many beginners get stuck with this transition. You will need a good deal of pull-up and dip strength to perform this movement smoothly.

The muscle-up is an excellent exercise to include in your arsenal. This movement humbles many athletes in their first attempt.

I recommend buying a pair of rings for this movement alone.

SETS AND REPS

Before proceeding to the remaining exercises of this chapter, I would like to discuss a few theories about sets and repetitions when performing pull-ups. One of the most common questions that I am asked is related to the ongoing saga of sets and reps. I have provided answers to two of these questions below.

Should I train pull-ups to failure?

I do not recommend training to failure regularly. You can approach failure, but you should avoid becoming stuck on the bar. For example, if you will fail in an attempt to achieve your 10th repetition, you should instead stop at 8 or 9.

To improve at pull-ups, you must put some serious work in on the bar. You need to train with several repetitions, without burning yourself out. This does not mean that your work on the bar should feel easy, rather you should simply back-off when your body begins to fail. There is a fine line between *too much* and *not enough*.

You can test yourself on the bar every 1 to 2 weeks, pushing yourself to achieve the maximum number of repetitions. Training to failure is not the worst thing in the world, but it should be avoided on a regular basis. Too much time spent failing, will cause you to fail in your attempt to gain strength on the bar. Remember, you need time to rest and recover between pull-up sessions.

If you constantly fail on the bar, you will need more time between workouts for full recovery to occur.

This is particularly true when training with more advanced pulling variations. Do not obsess over one-arm chin-ups. Let yourself build strength over time. If you try to rush progression, you will head down a road filled with overuse injury and pain.

Can I train pull-ups every day?

You certainly *can* perform pull-ups daily, although I would avoid the more advanced variations such as those described in this chapter.

In most cases, I recommend only 2 or 3 days per week training the more difficult movements. A sample week could include 2 days geared towards more advanced movements (ex. eccentric one-arm drops and weighted pull-ups) and another 2 days geared towards traditional bodyweight pull-ups for higher repetitions.

Obviously, your remaining weekly workload will play a significant factor in deciding how much time you can (and should) spend on the bar. If you are sparring hard in preparation for an upcoming fight, you must prioritize your schedule. Pull-up prowess will not be as important as skill work and conditioning.

To summarize, I highly recommend a regular dose of pull-ups. I simply caution you against putting all of your eggs into one basket. The pull-up is just one of many exercises to choose from. Variety is always important.

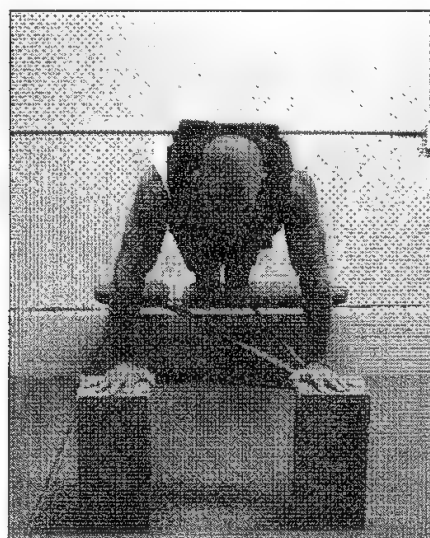
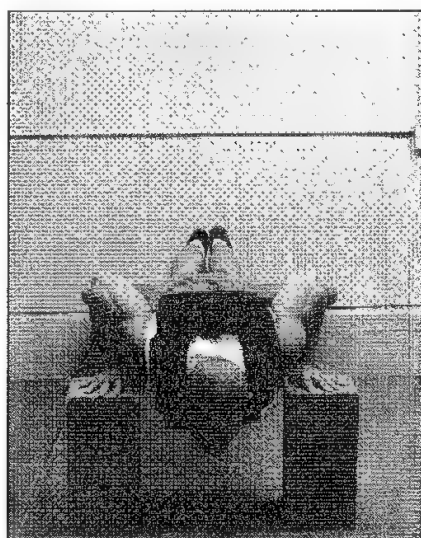
Let's now turn our attention to some additional bodyweight movements.

GOOD OLD PUSHUPS

Pushups (also known as press-ups) are perhaps the most common exercise in the world. We have all spent some time on the ground performing pushups. Obvious benefits include improved muscular endurance and strength throughout the upper body. Pushups also require stability, therefore strengthening the core.

If you are looking for ways to spice up the traditional pushup, you can add a weighted vest to the movement.

You can also extend the range of motion by performing weighted pushups between three blocks or chairs. This exercise is excellent for the chest, shoulders, and arms.



When considering the difference between bodyweight pushups and weighted pushups, it is common to ponder the following question.

Which variation is better?

This subject is often debated. Other commonly asked questions include the following. Is it more impressive to perform 100 pushups, or 10 one-arm pushups? Is it more impressive to perform 30 pull-ups or 1 one-arm pull-up?

Fortunately, there are no correct answers. Do not train to become a one trick pony. Who cares if you can perform a one-arm pull-up if you run out of gas after one round of combat?

As mentioned before, combat sports are multifaceted. You need a broad range of physical qualities. Higher rep bodyweight work is excellent for general fitness and muscular endurance. More strenuous exercises, such as those with added weight, are excellent for raw strength development.

A fighter needs strength and endurance. Do not choose one style of training over another.

Novice fighters are always amazed at how heavy the gloves feel after a few rounds of sparring. They cannot grasp how a 16-ounce pair of sparring gloves can feel like lead weights after a few minutes of action.

A fighter needs incredible amounts of muscular endurance in the shoulders and arms. Higher rep bodyweight exercise is an excellent way to achieve these goals. Power is another valuable attribute, best developed with more strenuous and explosive exercises.

The obvious question at this point is how does one combine these objectives into a weekly plan.

Suppose you wanted to include time for strength work, muscular endurance, and high-speed conditioning. How could you include these pieces in a weekly plan?

Let's look at a sample 7-day schedule.

Day 1 - Strength Emphasis + Core Training

Day 2 - Conditioning Emphasis

Day 3 - Muscular Endurance + Core Training

Day 4 - Rest

Day 5 - Same as Day 1, vary exercise selection
Day 6 - Same as Day 2, vary exercise selection
Day 7 - Same as Day 3, vary exercise selection
Day 8 - Rest

Day 1 and Day 5 would include more strenuous movements. If you were using strictly bodyweight exercises, you could perform movements such as the advanced pull-up variations from this chapter, weighted pushups and dips, one-arm pushups, handstand pushups, one-legged squats, and glute-ham raises. You could also include isometrics and explosive movements such as plyometric pushups and squat jumps. Your rep scheme would be low-to-moderate, as your focus is strength and power, not conditioning.

You would finish this workout with a core circuit (see chapter entitled **An Indomitable Core**). The core workout could also be performed at a different time in the day (ex. morning core training, evening strength work).

Day 2 and 6 would be designed as a conditioning/work capacity day. Sample sessions could include interval running and/or GPP drills (from the conditioning chapter). The workouts from these days should be brief, yet highly intense. Intensity is imperative to any conditioning routine.

Day 3 and 7 will shift your emphasis to muscular endurance. On these days, you will perform moderate-to-high repetition sets of less strenuous bodyweight movements. Common examples include pushups, squats, chin-ups, and dips. You will stick with exercises that are not as challenging on a rep-for-rep basis. Day 1 and 5 will include the more strenuous movements. Day 3 and 7 are used to *build* reps on exercises such as pushups and pull-ups.

Day 3 and 7 will also include a core circuit.

Over the course of 7 days, you will have two workouts that target raw strength development, two workouts dedicated to conditioning, two workouts dedicated to muscular endurance, and four workouts that target the core.

Suppose you were training for a one-arm pull-up. Using this program as an example, you could perform the more advanced exercises from this chapter on Day 1 and Day 5. You could then use Day 3 and Day 7 to train higher reps of traditional pull-ups. Your week would include four pull-up sessions, two for strength and two for muscular endurance.

This example is just one of many ways to target multiple objectives throughout the week.

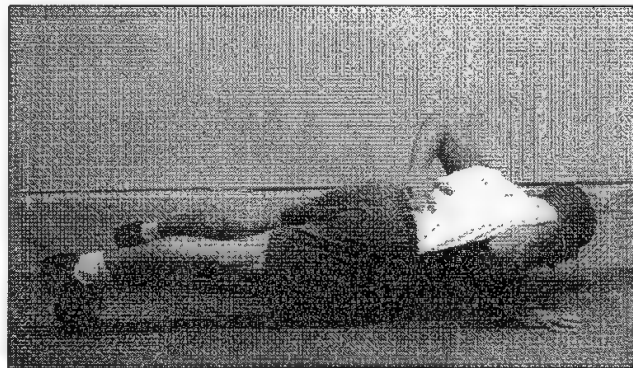
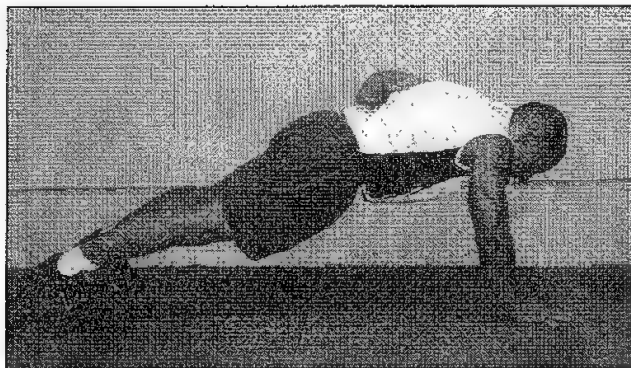
BACK TO PUSHUPS

Let's return to the pushup discussion.

If you do not wish to perform weighted pushups, you can instead choose a **one-arm pushup**.

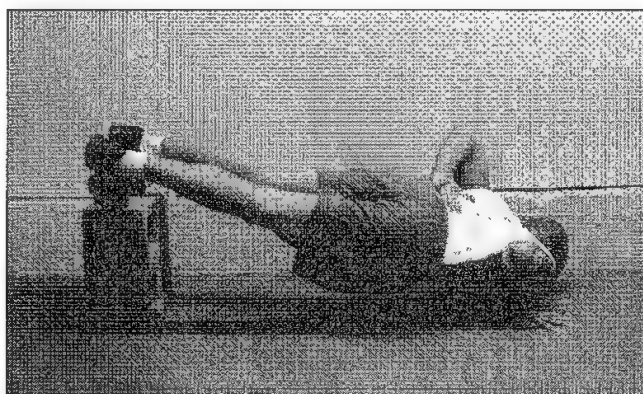
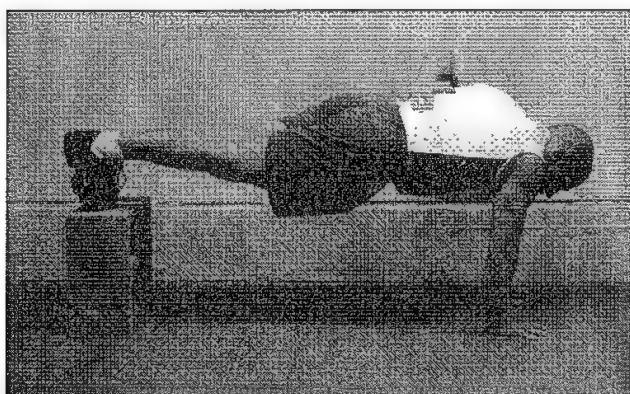
This exercise will require a mix of strength and balance. Rest the non-working hand across the back and spread the feet slightly wider than shoulder width to aid with balance. Keep the body tense throughout the movement.

Work both arms evenly.



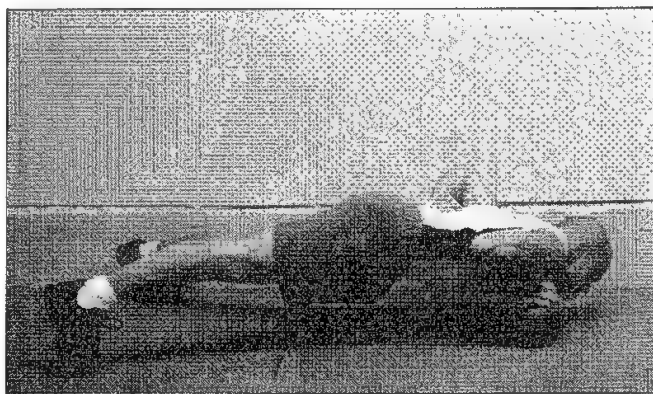
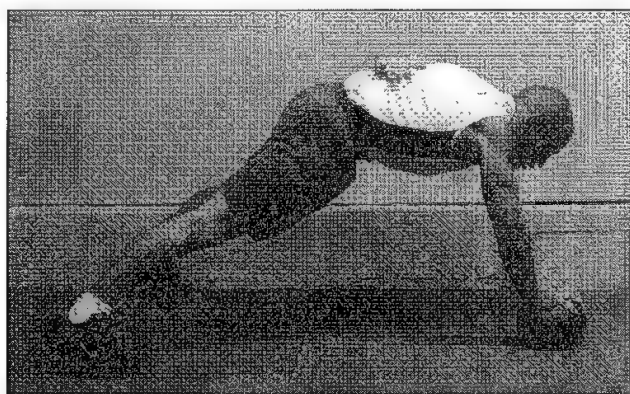
For a greater challenge, you can elevate the feet on blocks. This variation requires even more balance. As you can see below, I have leaned towards the right side (working hand side) to assist with balance. The amount that you will lean depends largely on body type. We all have unique body types (ex. limb length, tendon insertions, etc.), which impact leverage and balance.

There are no *one-size-fits-all* instructions for balance attainment. Find a system that works for you.



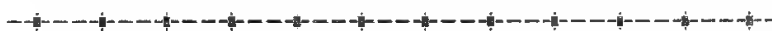
You can add to the core stabilization demands of the one-arm pushup by incorporating a medicine ball into the movement. Perform the pushup with the working hand resting on the medicine ball.

The medicine ball can also be used for two-handed pushups. By placing both hands atop the ball, you will perform a close grip pushup, with the added element of stability. I highly recommend this variation.

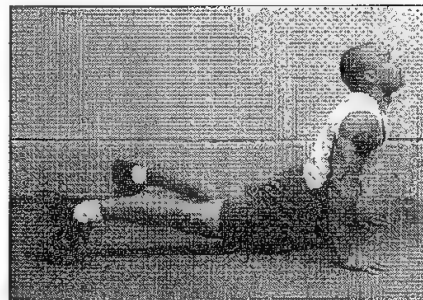
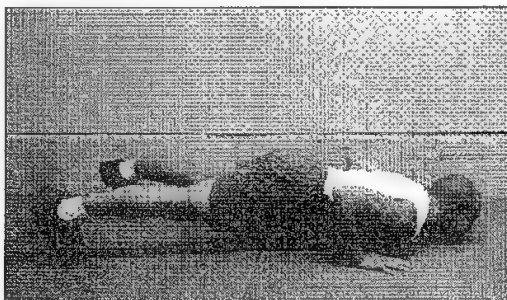
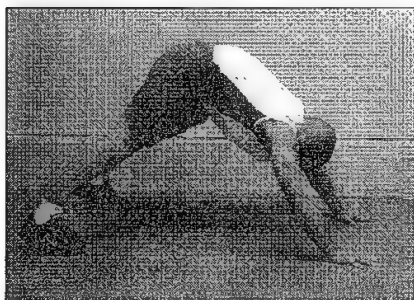


As you read these exercise descriptions, it becomes clear that bodyweight exercise can be as difficult as you want it to be. The room for creativity is endless. With a little imagination, you can develop variations to almost any traditional movement. I encourage you to think outside the box, always looking for new ways to challenge yourself. No one wants to become bored with a monotonous routine. New challenges often mold a path towards motivation.

The training effect of any movement will decrease as the body adapts to it. What works today, may not work tomorrow. Your body will adapt to almost any stimulus, hence the importance of incorporating new challenges.



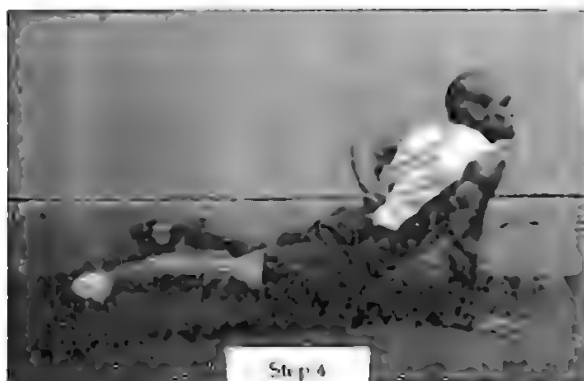
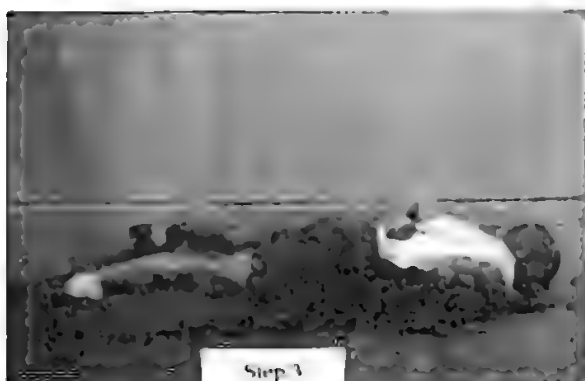
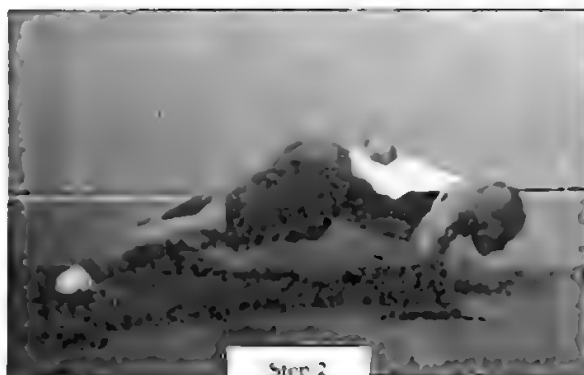
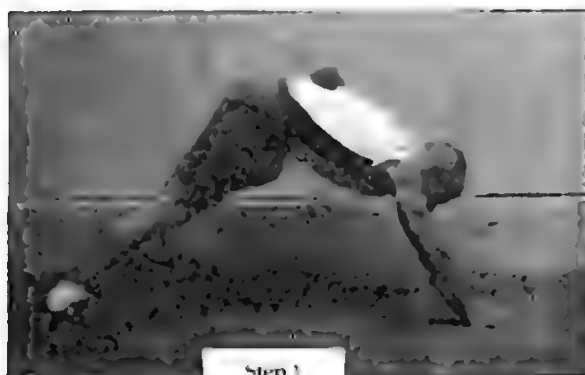
Let's continue our search for new challenges by examining the traditional **divebomber pushup**, illustrated below.



To perform the traditional divebomber, you will begin with the feet spread wide, with your butt pointing up. Your head will look back towards the feet. Continue by flaring the elbows out as you lower your head towards the ground. You will then flatten yourself out as if you were sliding underneath a bar. Finish the movement by diving your head upwards to the ceiling. Return to the starting position by reversing the motion.

Doesn't sound too bad, right?

Well, how about performing this movement with one-arm at a time? Suddenly, you transform a somewhat challenging exercise, into an extremely challenging movement.



As you can see, this variation is identical to the traditional divebomber, except it is performed with one arm at a time. You will need to keep the body tense throughout this movement, without impeding the natural flow of the exercise. Focus on "diving" down and then back up with fluidity.

Do not move like a snail. You must find a rhythm and follow it throughout the movement.

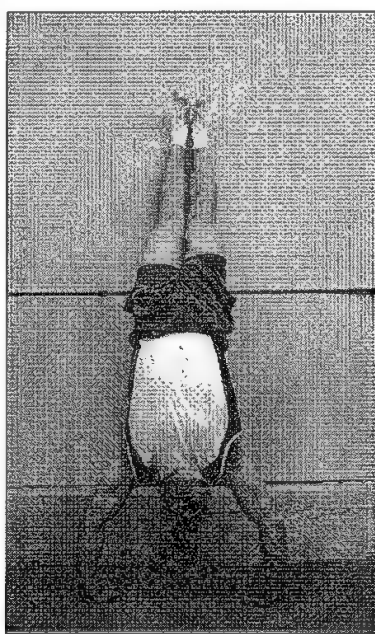
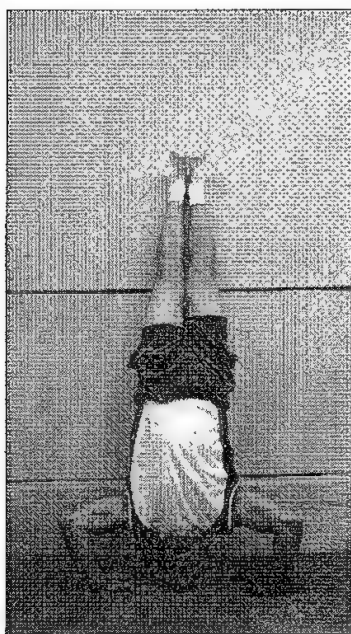
If this exercise is too difficult, you can start by performing a one-arm Hindu pushup. The difference between the Hindu pushup and the divebomber occurs during the negative portion of the movement. A divebomber requires that you *rewind* back to the starting position, as you retrace your steps. Your body will travel the same path, as you return to the starting position.

With a Hindu pushup, you would return to the starting position by simply pushing the hips back while maintaining straight arms. Hindu pushups are less challenging, particularly when working with the one-arm variations.

Both one-arm Hindu pushups and one-arm divebombers are more challenging than traditional one-arm pushups. Step up to the plate and accept the challenge!



Let's now shift our emphasis to the handstand version. The **handstand pushup** is one of the most challenging and effective bodyweight exercises available. This exercise will blast the shoulders, while strengthening the core.



First, assume the handstand position against a wall. From this position, push yourself up until the arms are extended.

Use the wall to help guide your feet. In time, you will become less reliant on the wall.

Strive to complete this movement with minimal support from the wall.

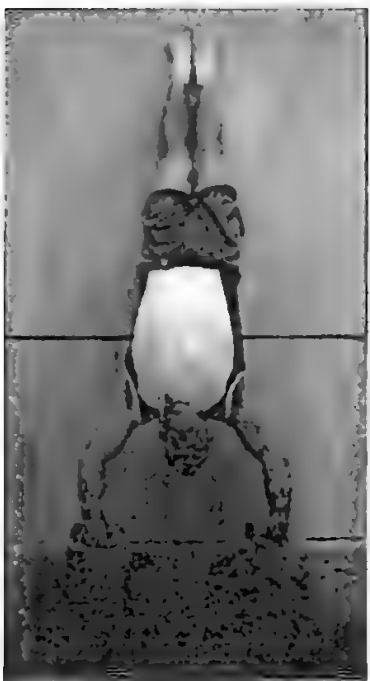
If you are unable to perform this movement, you can begin by performing static holds from the upright position. Gradually lower yourself, pausing for a few seconds every few inches. Static holds throughout the complete range of motion will quickly build the strength necessary for this movement.

As you become proficient with handstand pushups, you can intensify the movement by increasing the range of motion.



As you can see, I perform the handstand pushup with my hands elevated from cement blocks.

My head is just barely able to touch the ground. The cement blocks add several inches to the movement. I am able to train a much broader range of motion.



Eventually, you can raise the blocks even higher, preventing your head from touching the ground in between repetitions.

I have used two blocks to maximize range of motion. My head has no contact with the ground. I am able to lower my body as far as possible.

Benefits of this variation include improved strength, kinesthetic awareness, and balance.

When full range repetitions no longer pose a challenge, you can wear a weighted vest while performing the movement. I gained a great deal of strength by adding a weighted vest to this exercise. Core strength will also improve. You will notice the entire core contract throughout this movement.

Kick those feet up and start working!

A weighted vest can enhance almost any bodyweight workout. Obvious exercise candidates include pushups, pull-ups, squats, and lunges. The added weight of the vest will shift your emphasis away from muscular endurance and more towards raw strength development.

Two additional exercise candidates include dips and the bodyweight triceps extension.

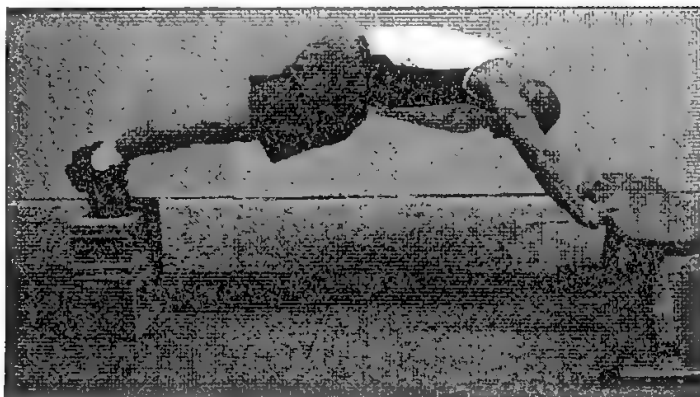


Dips are an excellent exercise to strengthen the shoulders, chest, and triceps.

As you can see, I have demonstrated dips on a home gym power tower. I bought the power tower for \$100 at a local sporting good store.

If you prefer a living room alternative, you can perform this exercise on two sturdy chairs. You can also perform dips from the playground rings that were illustrated earlier. The rings will require more stabilization and balance.

The **bodyweight triceps extension** is another arm blaster. You can perform this exercise against any sturdy chair or bench. Below I have demonstrated a variation with the feet elevated. You will begin with the arms bent and the head down. Extend each arm at the elbow, while maintaining a straight back.



When first trying this exercise, it may be useful to imagine yourself performing a triceps extension from a machine. You will perform the same action with your arms, only this time your body will form the resistance. Push down with the hands, *into* the bench (therefore activating the triceps) to initiate the movement.

Adding a weighted vest to this exercise will leave you with a very challenging triceps developer. You will not find many triceps exercises that can contend with this bad boy!

While this book is not designed to create inflatable muscle heads, there is nothing wrong with adding a little beef and brawn to your arms. You can develop a powerful set of guns with the bodyweight circuit below.

1. Pull-ups
2. Bodyweight Triceps Extensions
3. Chin-ups
4. Dips

Perform these four exercises as a circuit. Repeat the circuit three times. Perform each exercise 1 or 2 reps short of failure. For example, if you can perform 10 pull-ups, stop at 8 or 9 repetitions.

Minimize rest between exercises, while resting 1 to 2 minutes between circuits.

For a greater challenge, perform this circuit while wearing a weighted vest. This brief circuit makes an excellent finisher to any strength workout.

Who said that you would need to pump out biceps curls to train the arms?

THE OFTEN FORGOTTEN LOWER BODY

It may come as a surprise, but the next two bodyweight exercises are at the top of my list for lower body movements. You can develop a powerful set of legs with little or no equipment.

First, let's begin by discussing the one-legged squat, one of the most effective bodyweight exercises available. This exercise eludes most athletes. It is common for an athlete to try the exercise, fail, and then assume that their body type prevents them from achieving the movement.

Stop making excuses and start working on the movement. I have seen heavyweights perform this exercise with relative ease. They did not master the

movement overnight, but with regular practice, it is attainable for almost any athlete.

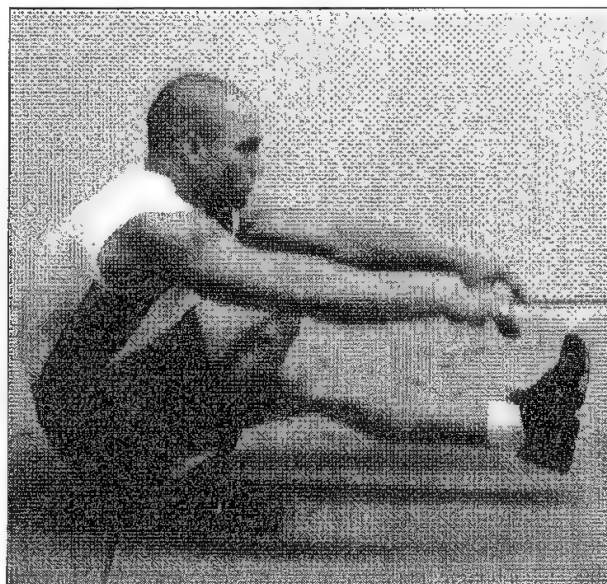
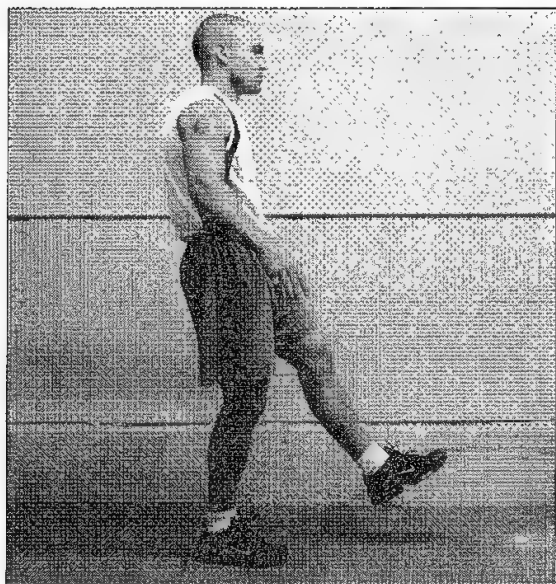
In most cases, you will need to train specifically for this movement. It is common to fail in your first attempts. As a youngster, I can remember falling on my ass when trying this exercise. My coach laughed as I struggled to maintain balance. I hated that I could not perform the movement. But rather than putting my tail between my legs, I began working on the exercise. It would have been easy to give up, but a real fighter will never give up. I live with this belief, both inside and outside the ring.

Was it easy to perform this movement? No, but nothing worth achieving is easy to acquire. People are quick to develop excuses for their lack of attainment. Rather than using your time to make excuses, why not use your time to develop a solution (no matter what the problem or obstacle may be!).

Stephan Dolley Jr. once said that *"A man who wants something will find a way; a man who doesn't will find an excuse."*

Unfortunately, most people make excuses. Don't fall into this category!

The **one-legged squat** requires a combination of strength, flexibility, balance, and coordination. If one element suffers, you will likely fail to perform this exercise.



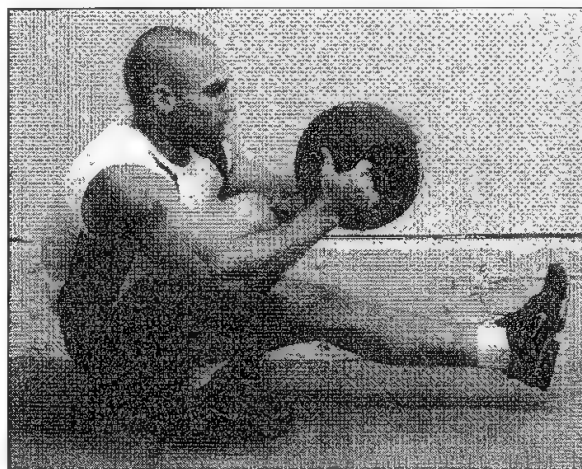
Begin by lowering yourself on one foot. The non-working leg remains straight as you approach the ground. You may lean forward slightly to assist with balance. Pause briefly at the bottom, before squatting upward on one leg.

If you have not performed this exercise before, you may need to begin with assisted repetitions. You can use a few methods:

1. The obvious choice is to begin with partial repetitions. Start by lowering yourself to a stair step or low chair. Lower yourself on one leg until your butt touches the step. Pause briefly and squat upward with the working leg. This variation will help build strength in the movement.
2. You can also practice this movement between a door entrance. Stand between the entrance, extending your hands to the side for balance. Hold one side of the entrance with each hand. Lower yourself into the bottom position, using the wall to assist with balance. As you approach the bottom position, try to hold this position for a few seconds. You must learn to balance yourself in the bottom position of this movement. Many athletes are strong enough to perform one-legged squats, yet struggle to maintain balance at the bottom of the movement. To overcome this shortfall, you should practice sitting in the bottom position. Once you develop the balance to hold the bottom position, this exercise becomes far less challenging.
3. Tie a rope to a pole (or have a partner hold the end of the rope). Perform one-legged squats while holding the taut rope. Use the rope to assist with balance. For example, if you begin to fall backward, pull on the rope to keep your body upright. Upon reaching the bottom position of the squat, pause for a few seconds, once again pulling on the rope to assist with balance. In time, you will become less reliant on the rope, able to hold the bottom position without assistance.
4. Wear a shoe with a large heel when first training for unassisted one-legged squats. For example, wear a work boot with a large heel. The raised heel will add stability and balance to the movement. One-legged squats with a flat heel or barefoot are much more challenging. You can gradually migrate from the larger heel, to a flat-footed shoe.

After working with these techniques, you will learn to perform unassisted reps. You can then intensify the strength aspect of the movement by holding a medicine ball, kettlebell, or free weight.

The extra weight will enhance the strength training effect of the movement. The weight may also help with balance. Many athletes



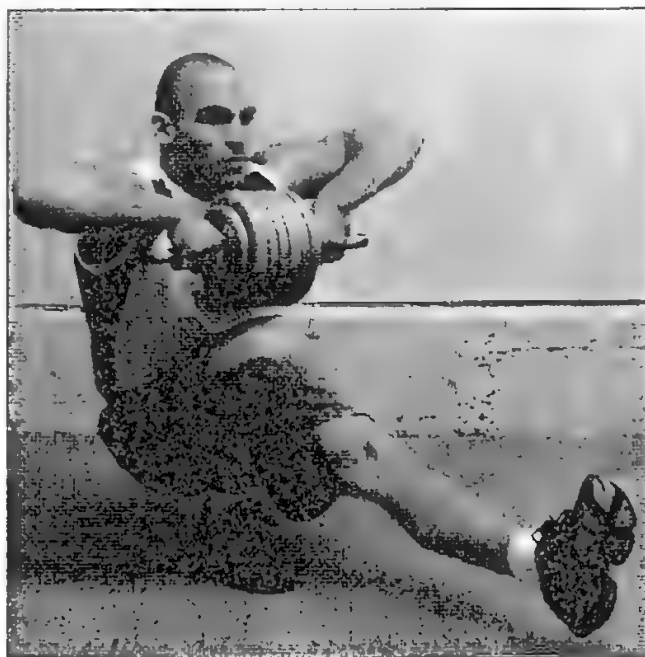
find that adding a weight is easier than the unweighted variation.

For a greater challenge, you can add heavier loads to the movement. Many athletes find that kettlebells offer a convenient way to add weight without interfering with balance. Dumbbells may feel a bit awkward to hold while performing a one-legged squat.

If you are looking for a cheap alternative, you can resort to the homemade dumbbell handle illustrated earlier. Rather than loading the ends with weight, you will load the middle of the handle with 10 pound plates. By doing so, you will have room at each end of the handle for your hands to grab. You will not need collars, as your hands will form their own weight stops (to prevent the weights from sliding).

As you can see, I hold the homemade handle at each end. The weight plates form the middle. I flare my elbows out to the side to avoid impeding the natural flow of the movement.

This weighted variation is one of the best lower body exercises that you will find.



BROKEN MIRROR

When discussing lower body training, what is the first thing that comes to mind? Most people will think of squats and the quadriceps. As mentioned earlier, when you stand in the mirror, what do you see? You see the quad muscles. The

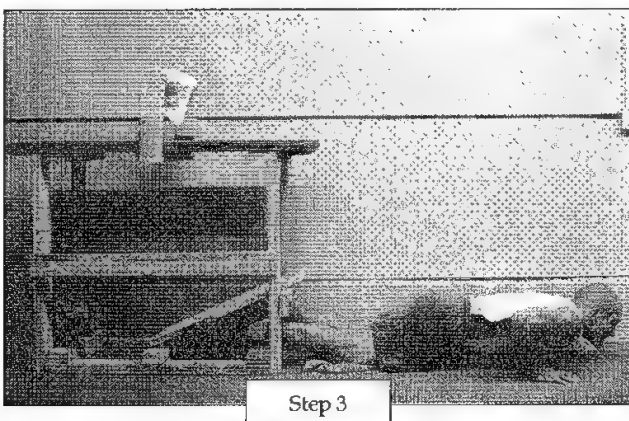
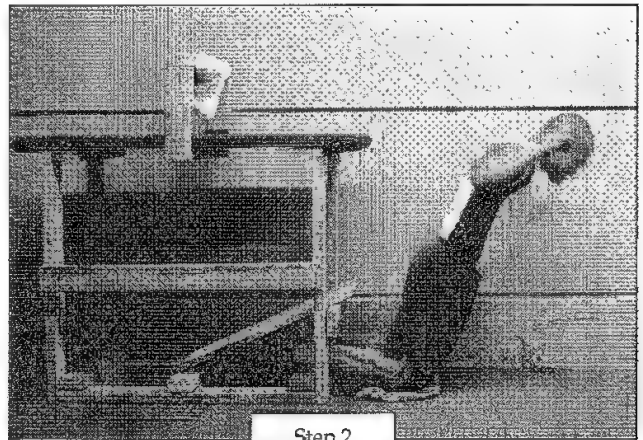
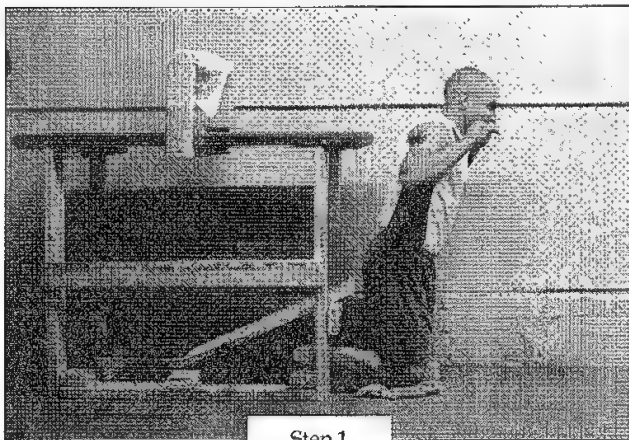
backside is hidden. Consequently, large muscles from the posterior side are forgotten, which leads to muscular imbalances.

Few athletes dedicate time to the hamstrings. The hamstrings are the fleshy muscles of the posterior thigh, consisting of the biceps femoris, semitendinosus, and the semimembranosus. The hamstrings are the prime movers of thigh extension and knee flexion.

Earlier, we discussed lower body dumbbell movements such as the Romanian Deadlift. Although these deadlift variations are excellent for the backside of the legs, I prefer the bodyweight **glute-ham raise** for hamstring development. The glute-ham raise is a difficult exercise that will humble many first time users.

To perform this exercise, you will kneel on the floor with some padding under the knees. The heels will be stabilized. A training partner can assist by holding the feet in place. You could also anchor your feet under a bench. In the illustrations below, you can see a homemade creation that I have developed for my own glute-ham training.

I am far from a carpenter, but this homemade pseudo-bench works fine for me. I use this bench for exercises such as back extensions, sandbag loading, and of course the glute-ham raise.



There are a few ways to perform this exercise. First, you can start from the upright position (Step 1), and perform several static holds on your way down. Stop every few inches and hold a static position for several seconds. Continue this pattern until your hands touch the ground.

You could also start this exercise from the ground. Contract the hamstrings tightly to pull yourself back to the starting position. Pull hard with flexed hips, hamstrings, and glutes. Keep the body straight throughout the movement.

Typically, you will need to assist the lower body by pushing off slightly with the hands (to initiate the upward movement). Minimize the assistance provided by your hands to achieve the optimum effect.

Fortunately, most athletes will make rapid gains in hamstring strength by consistently training with this movement. There is a good chance that you have never trained with this particular exercise. Gains come quickly when you introduce a new stimulus.

You will want to start slow however. Many beginners find their hamstrings extremely sore after training with this movement. Remember, the body needs time to grow stronger. Do not rush the process by thinking that you can do it all in one day.

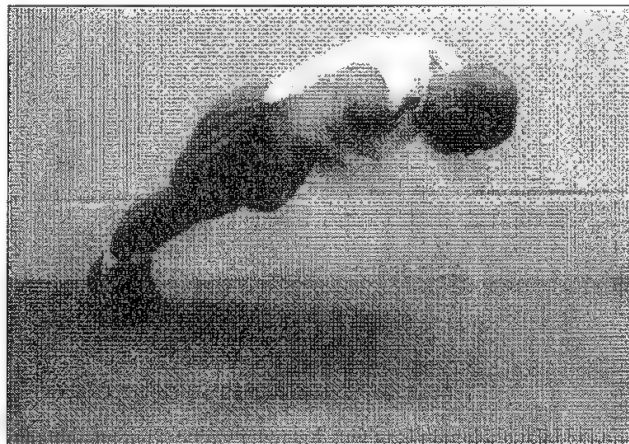
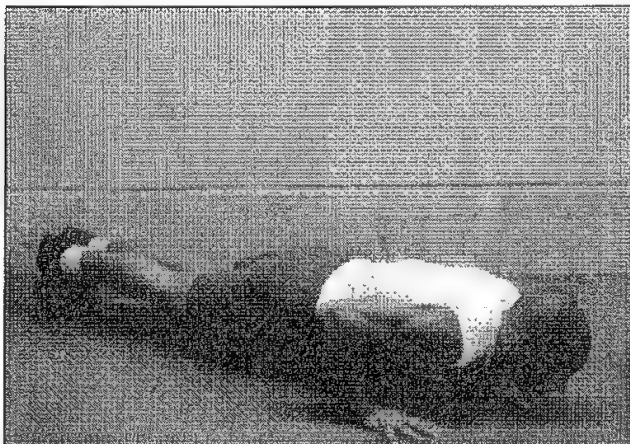
A BODYWEIGHT EXPLOSION

Bodyweight exercise is commonly related to muscular endurance training. We now know that we can also use bodyweight exercise to target other objectives such as maximal strength.

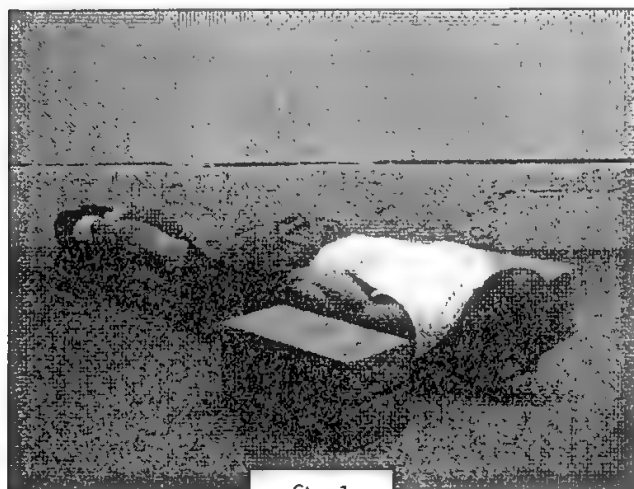
We are not finished yet...

Bodyweight exercise can improve speed strength and explosive strength.

Let's start with the traditional **plyometric pushup**. This exercise will be performed with a rapid cadence, maximizing airtime, and minimizing ground contact. Imagine the ground as a red-hot surface. Do not leave your hands down for long. Quickly explode off the ground.



When searching for ways to intensify the plyometric pushup, you can use a pair of cement blocks to convert this movement into a **depth plyometric pushup**. The added height of the blocks will intensify this movement.



Step 1



Step 2



Step 3

Start by performing a pushup between the cement blocks. Explode upward into the air. You will land with your hands on the blocks. The blocks should be visualized as a hot surface. Quickly explode back into the air, this time landing on the ground.

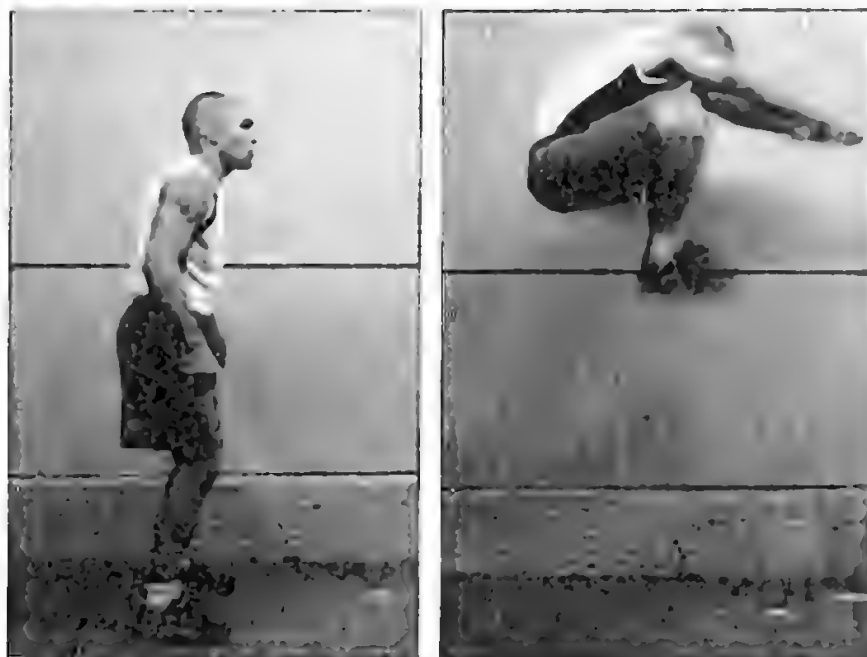
The ground should also be viewed as a hot surface. Contract quickly, thrusting back into the air. Continue with a rapid cadence.

When performing these explosive exercises, you must focus on quality, not quantity. Focus on exploding with maximum power during each repetition. These are not *conditioning* movements. These exercises are designed to improve explosive qualities.

Common repetition ranges vary from 6 to 15 reps per set. Do not perform high repetition sets with these exercises.

Let's now shift our attention to some lower body power movements. These movements are similar to the plyometric pushup, in that they emphasize quality over quantity. Strive to achieve maximum height with each jump.

The **knee tuck** below begins from an upright stance. You will squat down slightly, and then immediately explode upward. Drive the knees up towards the chest. Upon landing, repeat the sequence with a rapid cadence. You must minimize ground contact, while maximizing power with each jump.



The **squat jump** is a similar movement, which begins with a full bodyweight squat. Squat down until the thighs are approximately parallel to the ground. From this position, you will thrust upward into the air (do not bring the knees to the chest). Advanced athletes can hold dumbbells to intensify this movement.



The **lunge jump** is a more athletic movement than the squat jump and knee tuck. The lunge jump is intense, and will require a good deal of coordination.

You will begin by assuming a traditional lunge stance. From this position, you will drop down a few inches, and explode into the air. Jump as high as possible, allowing time to shift the legs in mid-air. The front leg will become the back leg upon landing. You will land in the lunge position, with your feet reversed from the beginning position. Upon landing, immediately explode into the air for the next repetition. This movement is advanced, and only recommended for well-trained athletes.



These explosive exercises are excellent to develop speed and power.



Fortunately, there are additional bodyweight training styles that can develop speed and power.

In the next section, I will discuss isometric training. Contrary to popular belief, isometrics are an excellent choice for training speed strength, explosive strength, and maximal strength.

ISOMETRICS

Isometrics offer another convenient way to increase strength without equipment. Isometric exercise involves exerting force against an immobile object. During the isometric action, the length of the muscle does not change, while tension remains relatively constant.

Two examples of isometrics include:

1. Holding a weight in a motionless state. For example, hold a barbell six inches off the chest during a bench press. Holding this position for time is one example of isometrics. You must prevent the bar from moving (descending).
2. A second form of isometrics involves pushing or pulling against an immobile object. For example, one could stand between a doorway and press upwards against the molding. This static hold is another example of isometric exercise.

Isometrics have been around for many years. Legendary strongman Alexander Zass preached the effectiveness of isometrics in the early 1900's. As a prisoner of war during World War I, Zass began pulling and pushing on the bars and chains that contained him. He quickly experienced benefits from his efforts. It was not long after that Zass began promoting this style of training through popular mail order courses. Zass has been dubbed by many as the *Father of Isometrics*.

Isometrics spread throughout the early 1900's, and became popular during the 1950's. During this time, T. Hettinger and E. Muller (1953, 1955) established that a daily effort of 2/3 maximum, for a period of six seconds, would increase strength by approximately 5% per week.

One reason for such improvements is surely the enhanced activation of motor units during an isometric muscle action. One can recruit almost all motor units during a maximal isometric contraction. Furthermore, one is able to maintain maximal tension for several seconds. This is not the case during dynamic exercise. Consider the act of pressing a dumbbell overhead. The entire press is completed in 1 to 2 seconds. Each joint angle is targeted for fractional seconds (ex. .25 seconds). With isometrics, you can train with maximal effort for several seconds.

The ability to target specific joint angles makes isometrics a perfect choice for overcoming sticking points in a dynamic movement. Suppose you are struggling to improve your overhead dumbbell press. You can press the dumbbell 5 inches

overhead, but you become “stuck” at this point. To overcome this *sticking point*, you can specifically train this joint angle by pressing upward against an immobile object. You could position yourself under a door entrance and press upward at the identical angle. You will be able to exert maximal tension, and direct it specifically to the joint angle in need.

As stated by sports scientist Yuri Verkhoshansky, “each 6-second isometric contraction is in effect equal to many dynamic contractions (ballistic type) in which maximal force is of a duration no more than 0.1 seconds” (1977).

While discussing joint angles, I should point out that isometrics were once thought to only train a specific joint angle. Recent studies however suggest that strength increases over a range of 15 to 20 degrees on either side of the training angle. This potential limitation is easily overcome by training several angles (ex. starting point, mid-point, end-point) of a specific movement.

WHY HAVEN'T ISO'S GONE MAINSTREAM?

After reading of such benefits, you may be wondering why you have not heard more about isometrics. What has prevented the mainstream adoption of this training style?

There are several reasons why isometrics have been kept quiet to the masses. First, equipment manufacturers have nothing to gain from mainstream isometrics. They would prefer that you purchase their proprietary products, rather than training without the need for equipment. Commercial gyms also have nothing to gain. These establishments try to persuade the public into believing that their facilities are necessary for fitness attainment.

To add to the problem, isometrics have lost steam with the increased popularity in bodybuilding techniques. For years, isometrics were thought to produce insignificant increases in muscle mass when compared to dynamic strength work. Consequently, bodybuilders put isometrics on the shelf, instead choosing methods that were more appropriate for hypertrophy. As bodybuilding became more popular, isometrics fizzled into obscurity.

To add to the problem, certain trainers harp on potential disadvantages associated with isometric training. For example, Verkhoshansky listed the following negative aspects of isometric training:

1. Isometrics fatigue the nervous system
2. Isometrics have a harmful influence on the cardiovascular system
3. Isometrics decrease coordination and speed of movement

4. Isometrics worsen the elasticity of the muscles

Many trainers are quick to point out these *potential* drawbacks. They do not tell you how to easily *avoid* such drawbacks. In short, with proper sequencing of work and rest, coupled with time for breathing, relaxation, and stretching, one can eliminate all negative effects.

Verkhoshansky points out this information, yet many trainers choose to use *selective science*, only pointing out the information that supports their claims. They fail to tell the other side of the story, such as those methods that will negate the potential drawbacks.

Another limitation that is commonly cited is the inability to measure progress. For example, how do you know that you are pushing against the immobile structure any harder after 3 weeks of dedicated training? How can you measure your progress?

These are legitimate questions, as it is important to monitor progress. You need to know whether you are improving. Fortunately, this limitation is easily solved. With this program, we are not limiting ourselves to isometric work. We will also lift weights, train for sport, and perform various bodyweight movements. You will notice strength improvements during these activities.

For example, suppose you are stuck at 100 pounds on the overhead dumbbell press. You begin working with isometrics for 3 weeks. When you return to the dumbbell press, you are able to press 110 pounds. Guess what, you just found a way to measure progress. Furthermore, as athletes, much of your progress will be evaluated by performance. If you begin using the isometric punching drills from this chapter, you will surely notice improvements in power. Ask your sparring partner if you need a second opinion. To summarize, there are several ways to measure the effectiveness of isometric exercise.

Do not use this lame excuse to overlook this valuable training style.

Another problem that has hampered the mainstream adoption of isometrics are the claims made by certain scientists about the long-term effectiveness of isometrics. Once one expert makes a statement, it has a downstream effect and becomes regarded as the definitive truth. For example, Medvedyev stated that isometrics cease to render a positive effect after 6 to 8 weeks of exercise. Consequently, many coaches and athletes overlook isometrics, assuming the positive response will be limited to a few weeks.

Ironically, this information conflicts with the findings of others such as T. Hettinger and E. Muller. Studies from these men showed clear improvements in strength over a 10-week testing period. These improvements were not limited to the first 6 weeks of the experiment.

Furthermore, no one has suggested that isometric training should form your entire training program. Rather, this style of training can be a valuable supplement. This supplement can continue to produce results, if used properly. The story of Alexander Zass is all that you need to confirm the long-term effectiveness of this training style.

Unfortunately, there have been very few long-term studies on isometrics. Most studies are performed for brief periods. Only those with real world experience can testify to the effectiveness of isometrics.

Personally, I have found that a few brief isometric workouts per week are very effective for strength development. The time and equipment requirements are minimal, with legitimate improvements quickly following.

Furthermore, isometrics offer a safe way to train maximal strength without weights. Suppose that you train alone and do not wish to attempt maximal lifts without a spotter. Not a problem! You can train maximal strength with isometrics. Tell your spotter to stay home.

TARGETING SPECIFIC OBJECTIVES

As with any style of training (ex. weightlifting or conditioning), we must target specific objectives when using isometrics. The isometric training protocol for absolute strength varies significantly from that of explosive strength.

For example, when training absolute strength, the force applied to the immobile structure should increase gradually. The development of absolute strength however has a negative influence on speed. For this reason, we must focus our attention towards explosive strength. When training explosive strength, tension should be generated with maximum speed (Verkhoshansky, 1977).

Shorter sequences (ex. 3 to 6 seconds) are also recommended when training for explosive strength. Longer sequences are commonly used when training for muscle mass increases. For example, it is common for individuals to hold isometric positions for 30 to 60 seconds when training for size. The increased time under tension is thought to produce greater mass gains.

Certain studies support the claims that longer duration isometric actions are more useful than shorter duration actions when training for mass increases. One reason for this occurrence could be related to blood flow occlusion and the resulting increase in metabolite concentrations (Kraemer and Fleck, 2004). On the flip side, there are those studies that suggest shorter duration isometric actions are more effective for hypertrophy. One recent study (Kanehisa et al. 2002) found that maximal voluntary muscle actions were much more effective than longer duration, sub-maximal muscle actions.

When choosing between short and long duration isometrics, I prefer using maximal voluntary muscle actions, held for brief intervals. In most cases, I do not recommend lengthy contractions for competitive fighters. Remember, our objective is to increase speed and strength. We do not want to risk any negative reactions to speed, coordination, and muscle elasticity. To avoid these potential problems, Verkhoshansky recommends that one limit the contraction to no more than six seconds.

I prefer maximal voluntary muscle actions to sub-maximal muscle actions. For example, I prefer pushing with 100% intensity, as opposed to a sub-maximal effort of 60%. Research (Rasch and Morehouse 1957; Ward and Fisk 1964) supports this belief, indicating that maximal voluntary isometric muscle actions are superior to sub-maximal contractions in producing strength increases (Kraemer and Fleck, 2004).

Furthermore, I challenge anyone to determine the difference between a 60% and 70% contraction. Without an expensive dynamometer, there is no way to measure the exact percentage of intensity. When you train with 100% intensity, there is no speculation. Either you produce a max effort, or you do not. This method of training will maximize results, while eliminating guesswork.

Below, I have listed three isometric styles that I commonly perform.

Maximum Effort Isometrics – For this variation, you will apply maximal tension to an immobile structure. Generate tension quickly and maintain this position for 3 to 5 seconds. This form of isometrics is excellent for maximal strength development. You will experience rapid strength gains.

Following my recommendation to produce tension quickly, it is a good time to discuss one of the most commonly debated topics regarding isometrics. This topic is whether one should gradually increase tension or slowly increase tension. I prefer to produce tension quickly when training for maximal strength and explosive strength. The alternative would be to gradually reach maximal tension over the course of 4 to 5 seconds.

It has been shown that by quickly producing maximal tension one will impose adaptations in contractile muscle properties such as the excitation-contraction coupling pathway (Kraemer and Fleck, 2004).

A simplified definition of excitation-contraction coupling is the process by which an action potential triggers a myocyte to contract. A myocyte is simply the technical term for a muscle cell. The ability to positively influence contractile muscle properties is clearly beneficial. After all, this is ultimately how you will produce force.

Explosive Isometrics - A similar variation can be used where tension is produced quickly, and applied for brief bursts (ex. 1 to 3 seconds). Your goal is to accelerate to full force as quickly as possible. This method is useful for improving speed strength. I commonly use this method when training isometric punches (illustrated on pages 100-103). These drills are useful when training hand speed and punching power. An effective puncher must produce power as quickly as possible.

At this point, I can hear some readers eager to ask the following question:

Ross, how can isometrics improve speed if there is no movement?

Fortunately, this question was asked before, and has been tested through science. Behm and Sale (1993) found that repeated *attempts* to perform ballistic contractions and the high rate of force development of the ensuing contraction were the primary stimuli for a high-velocity training response to occur.

Their studies revealed that the type of muscle action (isometric or concentric) was of less importance. The *intention* to move fast proved more important to speed development than the actual speed of movement. This information is very important when considering the use of explosive isometrics. You must produce maximal force as fast as humanly possible. Your intention is to push or pull through the immobile object.

Static-Dynamic Isometrics - The static-dynamic method involves the sequential combination of isometric and dynamic work. You will begin with a brief (ex. 3 to 5 second) isometric hold, followed by explosive dynamic work (ex. throwing a medicine ball or punching a heavy bag).

Verkhoshansky established that the static-dynamic method of training is superior for developing speed strength than dynamic exercise alone. In fact, the effectiveness of dynamic work can increase by as much as 20% in comparison

with work executed without preliminary static tension. Such after-effects occur immediately following the isometric work (1977).

Increase Speed and Power

A study was conducted to determine the effect of weight training and explosive isometric training on martial art kicks and palm strikes. The experimental group working with weights and explosive isometrics realized significant increases in both peak force and speed. This study confirmed what many of us have known for years. Speed is enhanced by supplementing traditional training with strength work and explosive-isometric training (Olsen, P.D & Hopkins, W.G, 1999).

FREQUENCY, DURATION, AND REST

If used properly, isometrics can be performed often, without overtraining. Science has confirmed this statement. In 1981, J. Atha established that daily isometric training is favorable for strength development.

Personally, I find that 3 to 4 isometric workouts per week are more effective on a long-term basis. As stated by Kraemer and Fleck, "perhaps the most efficient use of training time when using isometrics is to perform a minimum of 15 to 20 MVMA's (maximal voluntary muscle actions) or near MVMA's of **3 to 5 seconds in duration for three sessions per week**" (2004).

Daily isometric training can be useful at times, but can lead to burnout if performed for extended periods. I make this statement with the assumption that isometrics will only form one portion of your routine.

As a fighter, your week will be much busier than the casual fitness enthusiast. You will perform conditioning drills, sparring, weightlifting, core training, and more. The studies that confirmed the effectiveness of daily isometric training were not conducted on competitive fighters, often training two times per day.

One can benefit from a few isometric workouts per week. Keep the workouts brief, focusing on quality over quantity. It has been recommended that one limit isometric workouts to 10-minutes. Brief rest periods (ex. 10 seconds) are recommended between repetitions (Verkhoshansky, 1977).

I typically train each joint angle with 4 to 6 holds (reps). I recommend relaxing the working muscles between sets. For example, when performing isometric punching drills, I will shadow box lightly between sets to stay loose.

Isometrics can form a mini-workout, or be used in conjunction with other styles of training. For example, you could integrate isometrics with a weight training workout. Start with an isometric sequence, before continuing to the dynamic work, therefore exploiting the static-dynamic benefits.

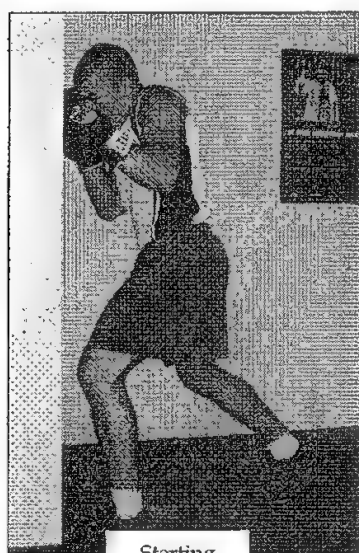


Now that we've beaten through the technical mumbo jumbo, let's get to some specific exercises that you can use to enhance total body strength.

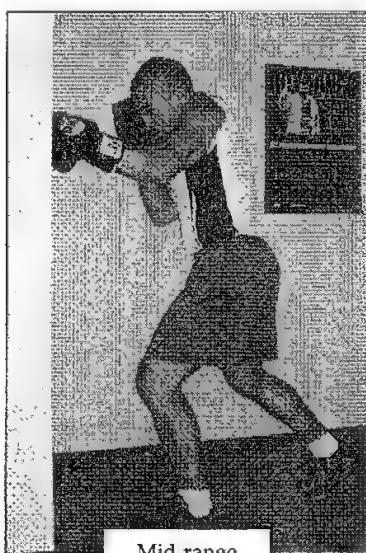
We will begin by discussing several isometric punches. These drills are excellent to develop punching power.

Below, you can see how I am training several angles with the lead jab. I press my fist against the wall while wearing gloves. I press forward with maximal force.

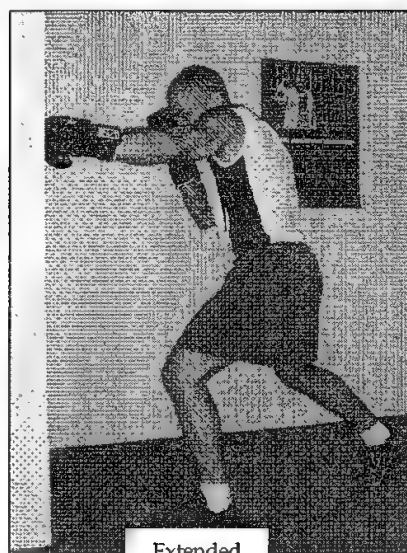
Be sure to breathe lightly during these drills. Do not hold your breath.



Starting



Mid-range



Extended

When performing these isometric punches, I recommend the explosive isometric protocol described on page 98. Maximal strength is not as important for punching power. There is not enough time to develop maximal strength.

As a fighter, you must focus on achieving velocity. Remember, strength is useless if you are too slow to land a punch. An old saying in the fight game is that *speed kills*.

Fortunately, these drills will enhance punching power **and** speed.

When you punch, you do not have time for significant force production. Rate of force development (RFD) is much more important. As stated by Zatsiorsky, "If the time available for force development is short, RFD is more important than maximal strength." Furthermore, as stated earlier, excessive maximum strength training can hinder speed strength (Verkhoshansky, 1977).

Clearly, one should focus on speed strength and explosive strength when training with isometric punching drills. One can also capitalize on the static-dynamic method of training. For example, you could begin with an isometric punch sequence (static). You would then follow with several brief power punching combinations on the heavy bag (dynamic).

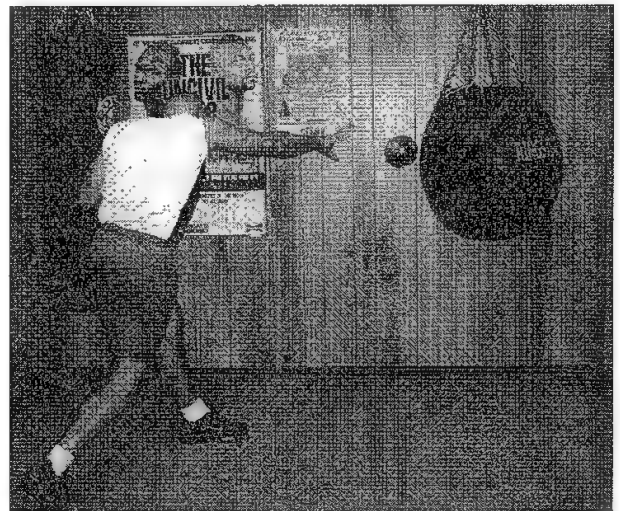
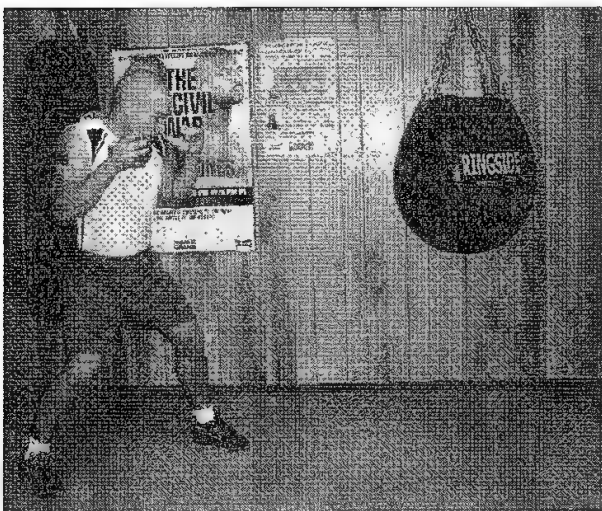
A sample drill for the lead jab is listed below:

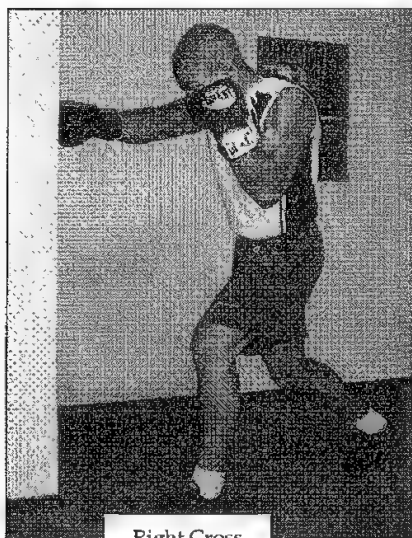
- Isometric Left Jab - Starting Range x 3 seconds
- Isometric Left Jab - Mid Range x 3 seconds
- Isometric Left Jab - Extended Range x 3 seconds
- Rest Briefly
- Double Left Jab on heavy bag x 10*

*You will throw 10 x 2 jabs (total of 20 punches), pausing a few seconds between each 2 punch combination.

You could also use a mini-medicine ball (ex. 3 to 5 pounds) to form the static portion of the static-dynamic protocol. Simply replicate the motion of a punch with a powerful medicine ball throw.

Below, you can see how I replicate the right cross with a 3 pound medicine ball punch. I simulate the motion of punching, by powerfully launching the medicine ball into the bag (used as a rebounding surface).





Right Cross

You can train any punch with this protocol.

As you can see, I have illustrated the right cross. You can train this punch with a beginning range, mid-range, and extended range.

Next, the left hook and right uppercut are demonstrated. The hook is trained by approaching the wall from a sideways stance. The position for these two punches will be in between the beginning and mid-range position. Based on the mechanics of each punch, you will not be able to train a beginning, mid-range, and extended range as you would with the straight punches (ex. jab and cross).

The hook and uppercut are *short punches*. You can train these punches adequately with one or two joint angles.



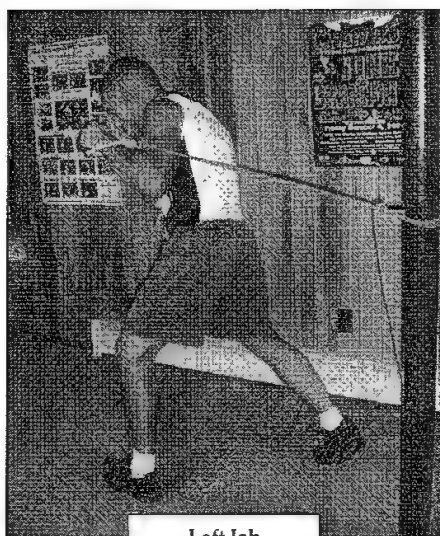
Left Hook



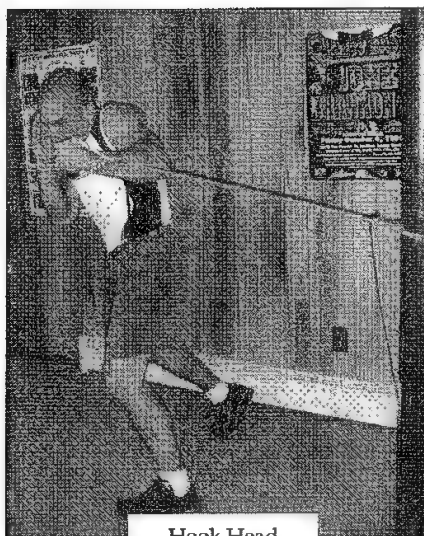
Right Uppercut

In addition to pushing against a solid wall, you can replicate each punch by pulling against a homemade isometric punch device.

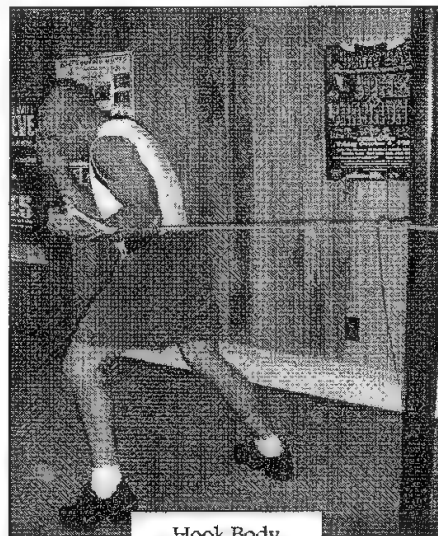
Below, I have illustrated the jab, the left hook to the head, and the left hook to the body. To train these punches, I have simply attached a boxing hand wrap to a pole. I then attached a small handle to the cloth wrap. I can hold the handle and simulate any punch that I choose. You can easily train multiple joint angles with this technique. Simply move forward or backward to alter the training angle. This drill was a favorite of martial arts icon Bruce Lee.



Left Jab



Hook Head



Hook Body

TRAINING TRADITIONAL MOVEMENTS

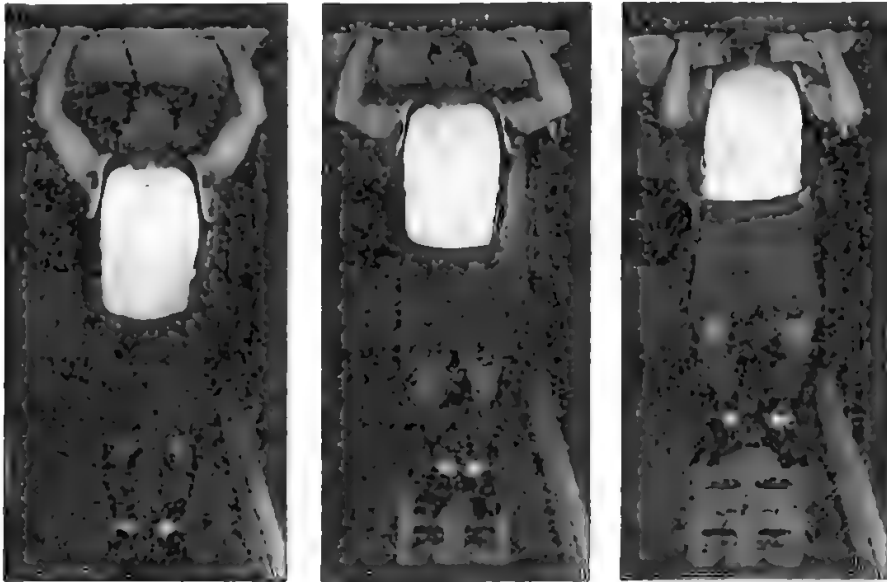
Upon reviewing the isometric punch drills, it becomes clear that isometrics can enhance almost any movement.

As mentioned, isometrics offer a valuable way to overcome sticking points. You can replicate almost any strength exercise with a little creativity.

Consider the overhead press as a classic example. You can perform an overhead press by simply standing between a door entrance. Press upward against the molding. You can vary the height (joint angle) by standing on books, blocks, or a stepstool. You can perform an overhead press with one hand or two hands.

Below, I have demonstrated the overhead press from three joint angles. I use cement blocks to alter the angle.

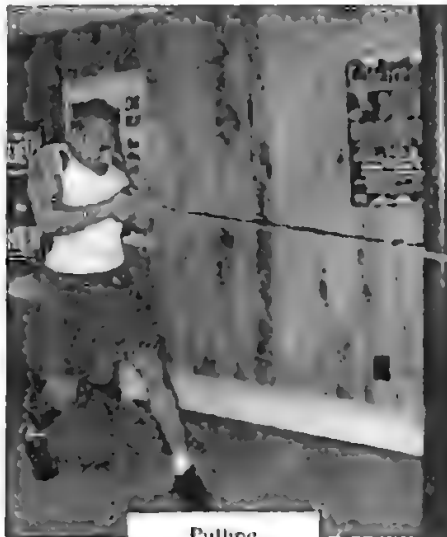
I made considerable gains in my overhead pressing strength by regularly training with this exercise. When training this movement, I focus more attention to maximal strength, as opposed to the explosive strength protocol employed for the punching drills.



Below, I have used the punching device shown earlier to replicate motions such as curling and pulling. In the lower right corner, I have illustrated an upright pulling motion, using nothing more than a towel. Pulling on the towel also adds the benefit of improved grip strength. The towel is difficult to grab when wound thickly.



Curl



Pulling



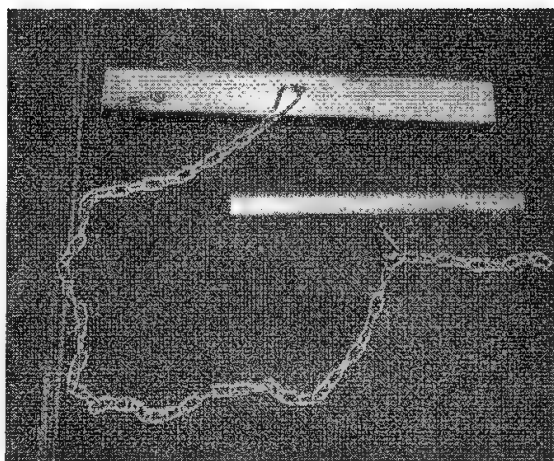
Upright Pull

In addition to these movements, you can build a homemade isometric training device that can replicate many weight training exercises. There are several options for homemade contraptions. One well-known device was popularized by Bob Hoffman, founder of York Barbell, in his program *Functional Isometric Contraction – Advanced course*. In this program, an isometric training device made from chain is illustrated. With this device, one can quickly train numerous joint angles for an infinite number of exercises.

Bruce Lee used a similar device as part of his vigorous training routine. One excellent resource regarding his training practices, *Bruce Lee – The Art Of Expressing The Human Body*, contains illustrations of Bruce Lee using such a device. Bruce Lee believed isometrics were excellent for strength development. He trained with short isometric workouts regularly, utilizing brief holds with maximum effort. Bruce Lee believed that a 100 percent effort was necessary, so he concentrated on producing a maximal effort while performing each isometric exercise (Little, 1998).

Fortunately, isometric training does not require expensive equipment. I built a similar (to Hoffman and Lee's device) tool for around \$15.

I attached a 2x4" piece of wood to a 1.5" dowel by using chain, two screw eyes, and a spring link. The spring link is used to vary the length of the device. You can quickly alter the length of the chain to adjust the joint angle being trained. I cut the 2x4" to approximately 24 inches, while the dowel is approximately 18 inches.



It has been said that there is nothing new under the sun. Isometric tools have been around for years. Regrettably, they have faded into the shadows. It is unfortunate, as such a simple tool is an excellent strength-building device.

On the following page, I have illustrated a handful of isometric exercises. If you are strapped for time, you can quickly perform a brief isometric workout. You can replicate any exercise, at any joint angle.



One Hand Pull



Triceps Extension



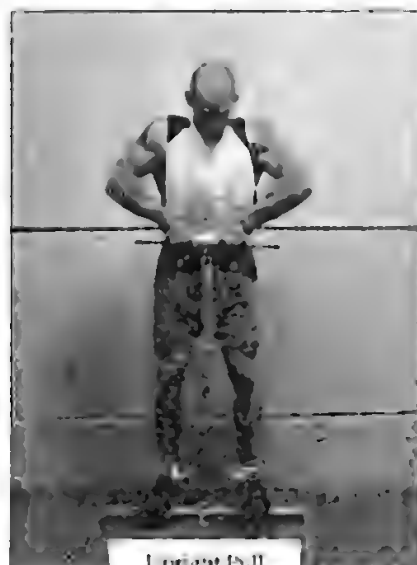
Curl



Overhead Press



Front Squat



Upright Pull

Although I do not recommend a training program based solely on isometrics, you can surely incorporate isometrics into your current routine. Isometrics will not develop the sport-specific endurance needed by a combat athlete, but will improve several strength qualities. Use isometrics to improve strength, as part of a well-rounded program.

One well-known study conducted by A.P. Slobodyan (1973) stated that 10% of one's training routine should be dedicated to isometrics. I agree with this recommendation. Although 10% may not sound like a lot, it can become an invaluable addition. Remember, these workouts do not require much time, as a

typical isometric session will be completed in 10 minutes or less. Due to the brief nature of these routines, this training style will not constitute a significant portion of your routine (in terms of time). The benefits however will be long lasting.

Let's now summarize some important points about isometric training:

- Isometrics are excellent for the development of strength
- Isometric workouts can be performed often, without overtraining
- Isometric workouts should be brief, focusing on quality over quantity
- You should train multiple joint angles whenever possible
- Isometric contractions should be brief, yet intense (maximum effort)
- Isometrics can be integrated with dynamic exercise, exploiting the static-dynamic after effects

In short, isometrics are an excellent supplement to a training program.

BODYWEIGHT TRAINING SUMMARY

Throughout this chapter, I have illustrated numerous forms of bodyweight training, such as advanced strength movements, explosive exercises, sport-specific isometric exercises, and strength building isometric exercises.

Your options are endless when training with bodyweight exercise. Do not allow anyone to convince you that bodyweight training is secondary to weighted resistance work. Both training styles are useful and recommended. My training philosophy integrates free weights with bodyweight exercise. It only makes sense to utilize the best of both worlds.

FULL THROTTLE CONDITIONING

"Never cut corners. Train hard and don't cut corners. Because if you do, it will come back to kick you in the ass. Guaranteed." – Micky Ward

Thus far, I have opened each chapter with a motivational quote. This chapter has followed the same theme, as we begin with a quote from former Junior Welterweight boxer Micky Ward. I would like to add a second quote however, only this time I have chosen one of my own...

"Conditioning is king inside the ring."

This simple line speaks volumes for the importance of a proper conditioning routine. Strength is important, but useless without the endurance to apply it.

CONDITIONING IS KING

Conditioning routines are far from enjoyable. Such routines are often associated with *overtraining* by the pencil pushing gurus of the world. These individuals do not understand the conditioning requirements of a competitive fighter.

A successful athlete must raise the bar on what is expected of him. The extraordinary did not become extraordinary by following *ordinary* routines. At some point, these athletes made the decision to dominate the competition.

Oddly enough, those individuals who take conditioning to the next level are a rarity in professional sports. It is common for athletes at all levels to struggle because of poor conditioning. Many world-class fighters run out of gas in the later rounds of competition. Despite tremendous natural abilities, these men often lose to less talented, yet better conditioned athletes.

This problem is not isolated to the combat athletes of the world. Conditioning affects athletes from all sports (ex. football). As mentioned earlier, even a powerful Corvette engine is useless without gasoline (energy).

NO EXCUSES

There is no excuse to lose a competition because of poor conditioning. You are in complete control of this objective. There is no excuse to neglect a controllable factor such as physical conditioning.

A basketball player cannot improve his height. A boxer cannot improve his reach. These “physical” qualities are outside of our control.

Conditioning however is much different. There are no secrets. Although certain routines may be more effective than others, we all know the most important factor of successful conditioning.

This *secret* is hard work.

At some point, you must dig down and put forth the effort. You must train with the intensity of a competition. If you never dig down during practice, you will not be prepared to perform at such high intensities during competition.

Perhaps you are familiar with the old saying, *“The more you sweat in practice, the less you bleed in battle.”*

Unfortunately, the ability to dig down deep within is easier said than done. All athletes would like to be in top shape. The hard work required deters many individuals from achieving their true potential.

A superiorly conditioned athlete can often outperform the more talented, less conditioned man. This happens all the time in competitive athletics.

REASONS FOR FAILURE

Let’s review four common reasons for poor conditioning.

Reason For Failure #1

“Can’t Suck It Up Syndrome” – Let’s face it, certain athletes have peanuts for kahoonas. They simply cannot “suck it up” when necessary. No one said it would be easy to work through advanced conditioning routines. At some point, you must determine just how bad you wish to succeed. If you lack determination, do yourself a favor and step out of line.

One of my first boxing coaches described this *syndrome* with a classic line.

"All the talent in the world cannot make up for a weak ticker."

Your "ticker" is your heart. Some athletes *have heart*, others do not. When you look back at classic athletic moments such as the battle between Marvin Hagler and Thomas Hearns, the definition of *heart* becomes clear. These men went toe-to-toe for three of the most intense rounds in the history of combat sports. Thomas Hearns fought through much of this action with a broken hand. His talent did not push him through the pain. He had to dig down deep within to continue fighting. Meanwhile, Marvin Hagler charged forward with relentless aggression until he eventually won the contest by knockout. These men put on a warrior's clinic. There was more heart in that ring than you will find at a cardiology hospital.

It is important to learn from these warriors. You must challenge yourself to reach new levels of conditioning. The work will be sweat drenched and challenging (physically and mentally). Your mind will beg you to quit. You must learn to turn this voice off and push through the fatigue.

Tour de France bicycling king Lance Armstrong described his training with the following line.

"As I start to get fitter and leaner during training camp, the pain becomes really sweet. I crave it."

We can all learn from these words. If you want something, go and get it!

Reason For Failure #2

Too Much, Too Soon - Rome wasn't built in a day, your body is no different. Unfortunately, many athletes fail because of their own ambition (or impatience). These individuals jump into the most advanced training routines that they can find. They wake up the next morning too sore to get out of bed. The intense routine that caused the soreness is put on the shelf, never to be performed again.

Everyone wants to train like a champion, even if their body is not prepared for the challenge. Don't make this mistake. There is no shame in taking things one-step at a time. You do not get out of shape overnight, just as you do not get in shape overnight. It takes many days, weeks, months, and even years to truly maximize your conditioning. You must learn to walk before you can run.

When you attempt too much, too soon, you cause more harm than good. Don't overreach your physical abilities.

The routines from this book will likely cause soreness. Soreness is simply a byproduct of a foreign stimulus. If an exercise or routine is new to you, the "stimulus" will be foreign to the body. Do not rush into the most advanced routine before establishing a solid foundation. Ease into the program.

In time, you will be amazed at your improvements. You will be able to train harder, longer, and more frequently. Soreness will become a distant memory.

In the words of Thomas Edison, *"Many of life's failures are people who did not realize how close they were to success when they gave up."*

These words should be printed on every gym wall. Do not give up on yourself. Worthwhile results take time, consistency, and dedication. You will not become a champion overnight. You also will not become a champion if you quit after one day of intense work. Feeling sore the day after a new workout is not overtraining. It is simply a response that takes place after introducing a new physical stimulus.

Do not do too much, too soon. If you do, do not fall victim to the "Can't Suck It Up Syndrome". Get back into the gym and be patient with your progress.

Reason For Failure #3

The Blind Leading The Blind - There are plenty of self-appointed gurus in this world. Everywhere you look, you will find someone patting himself on the back, declaring himself an expert.

Training myths run rampant in the combat sporting world. At one end of the spectrum, we have textbook gurus creating training programs for fighters. These pencil pushers could not fight their way out of a wet paper bag, yet somehow believe they are experts on the subject of fight conditioning. In all my years of education, I never had a class that explained the fatigue experienced inside the ring. One round of full contact sparring will teach you more about the conditioning requirements of combat than you will learn in four years at a university. Do not believe everything that you read. Ask questions, experiment with an ever-changing assortment of exercises, and find what works for you!

Shifting gears to the other end of the spectrum, there are those theories that have been passed on out of tradition, rather than science. One common example is the use of slow paced, long distance roadwork sessions. Although an occasional

distance session can be useful for mental toughness and restoration, it is not a means of conditioning for a combat sporting event. There is nothing slow paced about combat, so why train for a competition with slow paced roadwork?

If you choose to run distance, view the session as a race. Run a few miles as fast as you can, as if you were running in a road race. Running 2-miles as fast as possible is much more challenging (and useful) than a leisurely jog.

Keep in mind however that distance work (regardless of pace) should not be the primary means of conditioning. Our goal is to become explosive, powerful athletes. Excessive distance running is not part of this equation. On the contrary, too much endurance training will inhibit strength development.

Low intensity, aerobic exercise may lead to reduced muscle mass, strength, and power. Too much low intensity work could be detrimental to athletes involved in sports requiring strength, power, and speed (Siff, 2003b).

Do you need proof to justify these claims?

No problem, I have an experiment for you to perform. First, go watch a major endurance event such as the Boston Marathon. Observe the physiques of the marathon runners. What do you see? I'm guessing that you will find a group of thin, scarcely muscled individuals.

Next, go watch a major Track and Field event. Pay special attention to the sprint athletes. What do you see? I'm guessing that you will find a group of explosive, well-muscled athletes. These athletes are lean, yet muscled and powerful.

The human body is an amazing system. It adapts to the demands imposed upon it. The marathon runner cannot afford to carry excess musculature. Muscle is a heavy substance, which will slow the marathon runner down during a 26-mile race. The body therefore loses muscle to lighten the load. Consequently, marathon runners are typically thin. The excess aerobic work inhibits muscle growth and power output.

Meanwhile, the sprint athlete remains powerful and muscled.

Which physique would you prefer?

This training program will not include excessive distance work. We must preserve speed and power. We work too hard to develop our muscle. Don't throw it away with marathon roadwork sessions.

Reason For Failure #4

The One Dimensional Man – Let's close this discussion with one last reason for failure. This last reason is more difficult to recognize. Often times, the athlete begins with good intentions. He trains with optimal intensity, targeting the specific energy systems required for competition. For example, the athlete will run intense 400 meter intervals to target both the aerobic and anaerobic energy systems. After a few weeks of dedicated interval work, the athlete is likely to improve his times and recovery abilities. Due to his success, he continues to run, run, and run some more.

Makes sense, right? Wrong!

This athlete has put all of his eggs into one basket. His conditioning routine is one-dimensional, thus limited over the long haul. Variety is very important in the conditioning world.

We are not training for adaptation to a particular routine. Our goal is to continue the response. For example, a wrestler is not training for a 400 meter race. He can use 400 meter intervals to assist with conditioning, but he cannot overemphasize one style of training. The wrestler's goal is to improve all aspects of fitness. His work should include several styles of training, never limiting himself to one drill, no matter how effective it may seem.

Furthermore, the body will eventually burnout if you continue to plunge forward without change. It is important to focus your intensity in multiple directions. You can continue to train hard on a weekly basis, just not with the same routine over and over again.

CONDITIONING OVERVIEW

Before discussing the specific conditioning drills, I would like to discuss several important concepts. This information will form the backbone of our program.

The human body is powered by three energy systems. Two of these energy systems are described as anaerobic, or non-oxidative. Energy is produced from sources other than oxygen. The two anaerobic energy systems are the ATP-PC system and the glycolytic system. The third energy system is aerobic, meaning that oxygen is used for the oxidation of glycogen to produce energy.

Let's review each energy system...

ATP-PC – The ATP-PC system fuels short, yet highly intense activities such as a 100 meter sprint. The total capacity of this system is approximately 10 to 30 seconds.

ATP (adenosine triphosphate) is the energy molecule of cells, synthesized mainly in mitochondria and chloroplasts. The ATP-PC system relies on ATP already present in the muscles, and on a limited amount of phosphocreatine (PC) to regenerate ATP. Based on limited ATP stores within the muscles, this energy system quickly *runs out of gas*.

Clearly, the duration and intensity of exercise are inversely related. High intensity work can only occur in short bursts, followed by rest intervals to promote recuperation. PC reformation requires ATP and occurs only during a period of recovery.

For example, consider the fighter who throws a rapid-fire three-punch combination (energy production). Following the combination, he then circles the ring (recovery), before engaging his opponent again. The fighter cannot maintain a continuous, all-out barrage throughout the round. Speed and power will gradually decline, hence the importance of a proper conditioning program.

Glycolytic Energy System – The glycolytic energy system derives energy from glycogen. Glycogen that is stored in the muscle or liver undergoes glycolysis. Glycolysis involves a sequence of reactions that converts glucose into pyruvate and ATP.

Lactic acid is also produced when oxygen demands surpass oxygen supply. The increase in lactic acid brings about an increase in the production of hydrogen ions. The increased presence of hydrogen ions creates a more acidic environment in the muscles. Such an environment slows down enzyme activity and will eventually halt muscle action. The capacity of this system is approximately 90 to 120 seconds.

As the ATP-PC system is depleted, the glycolytic system becomes more and more important in generating energy to sustain the intense activity (ex. sparring for a 3-minute round).

Aerobic Energy System – The aerobic energy system utilizes proteins, fats and carbohydrates to produce ATP for energy. As intensity increases, the aerobic system becomes more and more reliant on glycogen (carbohydrate) as the primary energy source. If intensity continues to increase, the two non-oxidative (anaerobic) energy systems must furnish the energy required for the activity.

The aerobic energy system can sustain exercise for lengthy periods (ex. marathon running).

INFINITE INTENSITY CONDITIONING

Although certain activities are more dependent on specific energy systems, each energy system is simultaneously involved in all exercise. For this reason, it is important to train all three energy systems.

It is equally important to tailor the training program towards those energy systems that are more prevalent in your event. For example, a marathon runner will spend a significant amount of time training the aerobic energy system. A combat athlete on the other hand must focus more of his time towards the two anaerobic systems. Combat sports are anaerobic in nature.

The infinite intensity approach to conditioning will subscribe to this logic. We will spend much of our time targeting the two anaerobic systems. The aerobic system will not be neglected however. Each system is important, therefore requires attention.

An improved aerobic system will allow one to perform at a higher intensity with a minimal amount of lactic acid. As mentioned previously, lactic acid causes an increase in the production of hydrogen ions, which ultimately inhibits performance. By improving aerobic capacity, we will experience an increase in capillarization (number of capillaries per muscle fiber). The result is an increased transport of nutrients and oxygen from the blood vessels into the cells. Consequently, more oxygen is available to the muscles, thus delaying the onset of lactic acid.

In addition, a solid aerobic foundation can be helpful when trying to increase anaerobic capacity. Many athletes make the mistake of diving headfirst into the most advanced conditioning drills available. Their body is unable to cope with the sudden increase in intensity. If one's cardiovascular ability is inadequate, sudden increases in anaerobic training can negatively influence sporting performance (Siff, 2003a).

Furthermore, the term aerobic should not be associated with *easy*. On the contrary, aerobic sessions can be extremely challenging, both physically and mentally. All too often aerobic exercise is envisioned as a leisurely jog. This is a false assumption. For example, an interval running session consisting of 400 and 800 meter distances is extremely demanding. You may see the word *interval* and automatically assume anaerobic. While this is partially true, interval training also contains a significant aerobic component, particularly when the distance

increases beyond 200 meters. A 400 meter interval requires almost equal contributions from the aerobic and anaerobic energy systems. As you move past 400 meters, the work becomes more and more aerobic.

The next time someone frowns on aerobic training, invite them to a session of 400 meter intervals at the local high school track. While much of the work is anaerobic, an equal portion is aerobic. Although I am not suggesting excessive aerobic work, I recommend that this form of training be included in an *anaerobic-centric* program.

Clearly, a properly planned training program is essential. Too much aerobic exercise will inhibit power output, while inadequate aerobic capacity will hinder performance. Our conditioning program must be developed according to our specific objectives.

Let's look at a real world example to understand the ramifications of poor planning. Consider a 190 pound cruiserweight boxer who plans to make the jump to heavyweight. He engages in a hypertrophy-based strength program, and gains 20 pounds of muscle. He now tips the scale at 210 pounds.

While preparing for a 10-round bout, the fighter notices that he cannot maintain his usual pace in the later rounds.

What causes this problem?

Unfortunately, this fighter did not understand the ramifications of his training program. Excessive hypertrophy can cause negative effects on aerobic endurance by reducing capillary density in the working muscles (Zatsiorsky, 1995). His aerobic system is not prepared for a 10-round competition. If the fighter does not knock his opponent out within the first few rounds, he is in trouble.

His strength training program has negatively influenced his performance. This situation is common when fighters try to make **sudden jumps** in weight.

We will not make this mistake. Our plan will target each energy system, with special attention directed to those systems that are more pertinent to our success.

WORK CAPACITY AND GPP

In addition to targeting specific energy systems, our conditioning routine will stress a broader focus, namely improvements in work capacity and GPP.

“Work capacity refers to the general ability of the body as a machine to produce work of different intensity and duration using the appropriate energy systems of the body” (Siff, 2003a).

All athletes can benefit from improved work capacity. This is particularly true for combat athletes. You must be prepared to fight hard, round after round. Improved work capacity will allow you to endure more intense work, while quickly recovering between workouts (or rounds). Ultimately, you will enable the body to train harder, and more frequently.

Many competitive fighters train two or three times per day, often pushing their body to the limit. A poorly conditioned athlete will be unable to keep pace with such a rigorous training schedule. All fighters must be prepared to train hard, with the ability to recover quickly. You cannot train hard one day, and then be out of action because of extreme muscle soreness.

We will use several brief workouts each week to improve work capacity. These workouts will not be lengthy, as intensity is more important than duration. We will integrate various weighted drills and bodyweight movements to continue a positive training response, while avoiding boredom and staleness.

A close relative to *work capacity* is commonly referred to as GPP training. Verkhoshansky defines GPP (General Physical Preparedness) as “conditioning exercises designed to enhance an athlete’s general, non-specific work capacity” (1977).

Sports scientist Alexsei Medvedyev lists several benefits of GPP training:

- 1) “the formation, strengthening or restoration of habits (skills) which play an auxiliary, facilitatory role in sports perfectioning.”
- 2) “as a means of educating abilities, developed insufficiently by the selected type of sport, raising the general work capacity or preserving it.”
- 3) “as active rest, assisting the restoration processes after significant, specific loading and counteracting the monotony of the training.”

(Medvedeyev, 1986)

Another critical, yet often forgotten benefit of GPP training is its role in strengthening the tendons and ligaments. GPP training prepares the tendons and ligaments for the more intense training that will follow. One must realize that tendons and ligaments develop at a much slower rate than muscular strength. Many coaches over-prescribe explosive training techniques to athletes who are not structurally prepared to engage in such movements. Training to improve speed qualities such as speed strength coupled with inadequate integrity of the tendons and ligaments is a surefire recipe for injury. For this reason, it is important to include voluminous work such as bodyweight GPP circuits to strengthen the tendons and ligaments (Medvedev, 1986).

GPP training develops a well-rounded foundation by improving anaerobic and aerobic abilities, body composition, coordination, strength, and of course mental toughness. The benefits are truly innumerable. The ultimate goal is to improve those physical traits needed by the athlete. Specifically, this style of training enhances those abilities that are neglected by commonly performed sport-specific exercises. In laymen's terms, there is more to physical conditioning than simply hitting the heavy bag for a few rounds.

Unfortunately, many of today's athletes ignore the importance of GPP. This problem runs rampant across the sporting world, not just with combat athletes. In essence, all athletes can benefit from improved GPP.

After all, if you were able to work harder and more frequently, you would realize improvements in all aspects of training, not just strength and conditioning, but also skill work. Have you ever worked through a vigorous strength or conditioning routine, and then felt "flat" during the following day's sparring session? Improved GPP would enable you to quickly recover from the previous day's workout. You would enter the ring feeling fresh for the sparring session.

GPP work is gut-wrenching, yet highly effective. The drills are brief and can be performed without equipment. As you push through these drills, you will develop the ability to fight through fatigue.

No matter how talented you are, the time will come when you must push through pain and fatigue. These drills will develop the physical and mental abilities necessary to deal with such adversity.

What will you do when your opponent charges forward with relentless intensity? Can you keep up with him? Can you outwork him? Will you succumb to fatigue?

A proper conditioning program will allow you to answer these questions with confidence. A real warrior will encourage the intense pace. This is what we live for. Remember, you win fights in the gym. You do not want a competition to be your first experience with fatigue. You will be busy enough battling your opponent. Train the body to deal with the fatigue. Prepare yourself in the gym through regular GPP training.

There is no excuse to neglect this style of training.

GET IN SHAPE, STAY IN SHAPE

The goal of this program is to produce athletes who get in shape, and stay in shape. It is not enough to be *in shape* for one week. We will continue to train hard, by varying exercise selection weekly. We must train with the goal of continuous improvement.

Seems obvious, right? Wrong!

On the contrary, many athletes take frequent breaks from training. The athlete will work hard in preparation for a competition, and then take a few weeks off from his or her training program. This scenario is extremely common in combat sports. Many professional fighters will train for 6 to 12 weeks in preparation for a major bout. After the competition, the athlete will take a few weeks off from training.

This is a mistake.

Following a break from training, the athlete must spend considerable time and energy restoring general fitness. He essentially takes two steps backward for every step forward. Detraining occurs during periods of inactivity. The athlete must then work twice as hard just to reach his previous level of fitness.

Rather than working to improve, he spends much of his time simply restoring what he had already achieved.

As a fight fan, I'm sure you have read stories about athletes who compete in one weight class, yet walk around at a weight that is much heavier. For example, a middleweight boxer who competes at 160 pounds may *walk around* at closer to 190 pounds. This fighter allows his weight and body composition to fluctuate between fights. When training for a new fight, this athlete must work twice as hard to simply get back to where he ended his last training camp.

Furthermore, those athletes who take extended breaks between competitions become more prone to injury. The athlete returns to the gym and overestimates his physical fitness and potential. Various motor abilities have different retention rates. Some remain stable, while others are lost quickly (Zatsiorsky, 1995). When the fighter returns to the gym, he must contend with an imbalance of motor abilities. His mind believes that he can jump back into action, but his body may not cooperate.

As a serious athlete, you must dedicate yourself to year-long training. Surely, you can include *back-off* sessions where volume is reduced, but there is no reason for extended periods of inactivity. The goal of your training program is to enhance preparedness and performance. Do not train with the goal of restoring or preserving past abilities.

How do you avoid burnout?

At this point, you may be wondering how one can continue to train hard, without burning out and falling victim to overtraining.

This is a valid concern, which is easily prevented through proper planning. Let's look at two surefire ways to avoid burnout, while fostering continuous improvements.

Annual GPP Training – This should come as no surprise. I have already listed several benefits of GPP training. Remember, as your work capacity improves, so does your ability to train with more intensity, more often. It is unacceptable to let work capacity decline during extended periods of inactivity. You must remain active if you plan to succeed in the sporting world. As a consummate professional, you must dedicate yourself to yearly training.

If I had a nickel for every fighter who took extended breaks after a competition, I would be a rich man. This is unfortunate, but also a reality. Stay in the gym all year. Your time and energy will be rewarded. You will have a distinct advantage over future opponents.

Varied Training – Another way to avoid burnout is by regularly incorporating new exercises and drills into the weekly training program. Although it may seem obvious, this concept is rarely applied in the real world.

For example, suppose a professional boxer limits his training repertoire to sport-specific activities such as heavy bag work, sparring, and focus mitt training. Despite the obvious benefits of each drill, one cannot continue to train with this

exact routine for 52-weeks a year. Have you ever heard the phrase *"too much of a good thing"*? These words speak volumes for the importance of variety.

There clearly is such a thing as *too much*. By constantly training the same movements with maximal intensity, you will negatively affect the central nervous system.

In short, it does not make sense for the boxer to limit his conditioning to daily sessions of max-effort heavy bag training.

The *"lack of variety syndrome"* commonly occurs in weightlifting gyms across the country. Everyone wants to improve their bench press, so what do they do? They bench, bench, and then bench some more.

Big mistake...

The lifter may experience some early gains, but will eventually plateau, and possibly move in a negative direction.

Consider the following words from Louie Simmons (2003) at Westside Barbell Club:

"When lifters repeatedly use the same simple method of training to raise their strength level, they will eventually stall. Like the scholar who must utilize many sources of information to achieve a higher level of knowledge, the lifter must incorporate new and more difficult exercises to raise their standards."

He goes on to say,

"Think about it, if you read only one book, no matter how many times you read it, you will only learn so much. If you only squat, you will get only so strong because no new stimulus is introduced..."

Although we are not training for a powerlifting competition, we can certainly learn from these words. Variety is imperative for any successful training program. Furthermore, it is clear that variety is commonly neglected. Athletes often resort to a handful of movements. This is a mistake, which will limit improvements over the long haul.

As a fighter, you must continuously raise your physical potential. There is only so much that you can achieve if limited to one style of training. You must constantly rotate between different exercises and routines. Intensity is essential, but you will focus it in different directions.

As an athlete, you must balance several training objectives throughout each week. You must make time for strength work, conditioning, core training, sparring, partner drills, and more. With such an intense workload, you must do everything possible to foster recovery and restoration between workouts. You cannot experience excessive soreness from one routine, without hindering another. If Monday's conditioning workout causes extreme soreness, how can you expect to spar on Tuesday?

There is a good chance that you will look like a punching bag.

We must improve several physical abilities, while remaining fresh throughout the week. We will balance intensity, while allocating it across several drills and exercises.

As a youngster, I can remember one coach who had me sprinting hills daily. All the roadwork made my legs feel sluggish. Rather than improving my endurance, I was left tired and flat during each competition. It was not long after that I began training with another coach. Our conditioning routine would include an assortment of exercises. Each day brought about a new challenge. We were able to train harder, more frequently, while remaining fresh throughout the week.

Too much of one exercise or training style will negatively affect the central nervous system. This will bring about the sluggishness that you may have experienced in the past.



Scientists have learned that lifting loads above 90% of the athlete's one rep maximum will eventually cause negative affects on the CNS. As stated by Medvedyev, many studies "recommend that one periodically change the (training) methods; since they lose their effectiveness after approximately one month" (1986).

For example, if you were to bench press heavy for more than three consecutive weeks, you are likely to overburden the central nervous system. Rather than limiting yourself to one exercise, you should work with several exercises, making changes on a weekly or bi-weekly basis.

Louie Simmons has developed many of the strongest lifters in the world by varying exercise selection, yet continuing to train at or above the one-rep maximum. His athletes are able to lift heavy each week by constantly changing their maximal effort exercise. Simmons employs a conjugate method of periodization with his lifters. By regularly changing lifts, the CNS is able to

accommodate the repeated high intensity training. Essentially, the athlete gets stronger, while remaining fresh.

We can apply a simplified version of the conjugate method to our conditioning program. Conjugate periodization involves, "successfully introducing into the training programme separate, specific means, each of which has a progressively stronger training effect, and coupling them sequentially to create favourable conditions for eliciting the cumulative effect of all the training loads" (Siff, 2003a). In short, we will train at (or near) maximal intensity on a weekly basis. Each week will require a unique conditioning challenge.

The conjugate method enables the athlete to simultaneously improve several physical traits (ex. strength, power, anaerobic capacity). Essentially, we are able to train and improve many physical abilities at once. The logic behind this program is that one must raise all physical attributes at the same time to maximize performance regularly. As we work towards this goal, we will constantly incorporate variety to avoid adaptation.

Let's summarize this section with a few bullet points:

- The conditioning program must reflect our specific objectives, namely improvements in anaerobic endurance and work capacity.
- Each energy system will be enhanced, with specific attention directed towards the two non-oxidative (anaerobic) systems.
- Intensity is essential. We will maintain intensity by constantly varying exercise selection, therefore preventing burnout, while promoting continuous improvements.
- Never lose because of poor conditioning!

Let's now look at the specific exercises and routines that will form the program.

INTERVAL TRAINING

Interval training alternates periods of high intensity work, followed by less intense bouts of rest or recovery. Interval training allows one to train with optimal intensity, by breaking the workout into manageable sessions of exertion.

For example, suppose **Athlete A** engages in a heavy bag workout. He hits the bag for ten consecutive minutes. A few minutes into the session, his power

declines. Fatigue mounts and compromises the intensity of his workout. The latter half of the workout is sluggish, sloppy, and slow paced.

Athlete B also engages in a heavy bag workout. His workout consists of 3 x 3-minute rounds (3 rounds, each consisting of 3-minutes with 1-minute of rest between each round). **Athlete B's** workout is much more effective. He has broken his workout into 3-minute *bouts*. Each 3-minute round entails a fast paced, intense effort. After each round, he rests for 1-minute, before returning to action, with another intense 3-minute bout.

The quality and intensity of **Athlete B's** workout surpasses that of **Athlete A**. **Athlete B** is able to throw more quality punches, while developing the ability to recover between rounds. As a combat athlete, one will commonly compete with predefined rounds (ex. 2, 3, or 5-minutes). A 1-minute rest follows each round. The best way to develop the ability to recover between rounds is by practicing this particular skill. Interval training is the perfect solution.

Interval training can be applied to almost any training modality. Four common interval training activities include:

1. Running
2. Jumping rope
3. Punching a heavy bag
4. Machine training (ex. stationary bike or VersaClimber)

Interval training sessions are excellent to target the energy systems required by the athlete. For example, intense punch intervals on the heavy bag are ideal for developing the anaerobic energy systems of a fighter.

Let's now discuss each of the previously listed activities.

INTERVAL RUNNING

Running has long been a staple of a combat athlete's conditioning. As mentioned earlier, many athletes have abused this style of training, by focusing all of their attention to long distance, slow paced activities. We will not make this mistake.

Interval running is intense and effective. This style of training will force you to dig down and fight through the unavoidable fatigue. Common distances for interval running sessions include 50, 100, 200, 400, 600, and 800 meters. Shorter distances (ex. 50, 100, and 200 meters) direct more attention to the anaerobic

systems. As the interval increases, the session becomes more and more aerobic. Energy system contribution estimates are listed below*:

- 200 meter intervals are estimated to be 29% aerobic and 71% anaerobic
- 400 meter intervals are estimated to be 43% aerobic and 57% anaerobic
- 800 meter intervals are estimated to be 66% aerobic and 34% anaerobic
- 1500 meter intervals are estimated to be 84% aerobic and 16% anaerobic

Our conditioning program will integrate several distances. Each energy system will be targeted, with specific attention to the anaerobic systems. As an athlete and trainer, interval training has always been one of the most effective conditioners in my arsenal. Interval running is useful for athletes from all backgrounds.

Many will read these words and counter with the following:

"Why run intervals, after all, I am training to fight, not for a road race..."

At first glance, this argument seems logical. After careful examination however, this statement quickly loses steam.

Combat sports have a significant anaerobic component. Interval running offers one of many ways to enhance anaerobic fitness. Furthermore, the legs are instrumental to any fighter, regardless of style. The legs carry you from point A to point B. The legs are your support system. If you have ever stepped foot inside the ring, you can testify to the importance of the legs. Have you ever been hit with a solid body punch? A common reaction to several body punches is the feeling of *no legs*. You lose the ability to move freely. It feels as though someone has sapped the strength from your legs, as they fumble with a mind of their own.

All fighters need a solid base of support. Train the legs to go the distance.

Let's look at a brief example to drive this point home.

Consider the professional boxer who runs in the morning, and then returns to the gym in the evening. This athlete has the benefit of training the anaerobic systems twice in a 24-hour period. It would be illogical to hit the bag in the morning, and then again in the evening. Such a program would quickly lead to overuse injury and overtraining. It makes more sense to run in the morning, and then focus your efforts towards your particular fighting style (ex. boxing, kickboxing, grappling) in the evening.

* Spencer, Matt R. Gastin, Paul B. Energy system contribution during 200 to 1500 m running in highly trained athletes. *Medicine & Science in Sports & Exercise*. 33(1): 157-162, January 2001.

As athletes, we must look for new ways to improve fitness and work capacity. Running is not the only option, but clearly a viable alternative.

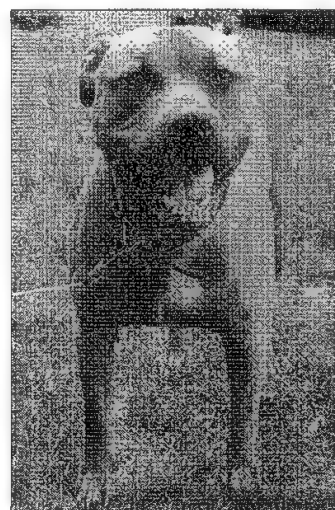
If it does not make sense to run as a non-competitive runner, would you also argue that it does not make sense to lift weights, if you are not a competitive weightlifter? If you believe this statement, you should look into new hobbies such as basket weaving or crochet.

Now that you know the benefits of interval running, let's review some important topics related to this subject.

Pace – One of the most common questions that I receive about interval running is related to the pace of the session. How fast should one run during interval training? Should you start with an all-out sprint? Should you pace yourself throughout the interval? What is the best technique?

These questions can be easily answered by viewing each interval as a race. Your goal is to complete each interval as fast as possible. Shorter distance intervals such as 50, 100, and 200 meters, will allow for a maximal effort sprint. There is no reason to hold back during these shorter distances. You should run as fast as possible.

I once worked with an athlete who was unsure of the pace he should run during the 200 meter interval. I was fortunate to have my roadwork assistant with me. My assistant Tank, an American Pit Bull Terrier, was happy to lend a hand (or paw). I told the athlete to run as if Tank was chasing him down. I let him start the interval session 5 seconds ahead of Tank. I then followed him with Tank on the leash in hot pursuit. The leash was necessary to prevent any potential lawsuits. The athlete quickly learned two valuable lessons. First, always run fast when a pit bull is chasing you. Second, run shorter distance intervals at top speed.



Interval distances greater than 200 meters will require some degree of pacing. You cannot begin an 800 meter interval with a full sprint and expect to maintain speed. In this instance, we can resort to the advice above (view each interval as a race). For example, if you were competing in an 800 meter race, how would you ensure an optimal time? My advice is to run the interval at a brisk pace and then finish the last 75 to 100 meters with an all-out effort. After a few interval sessions, you will determine your optimal pace. I view the optimal pace as fast enough to pose a physical and mental challenge, yet not too fast that you cannot

complete the interval with a final 100 meter surge to the finish line. Upon crossing the finish line, you should be fatigued. If you are not tired, you are not running hard enough. Interval training is designed to challenge the body and mind. Put forth a true effort to ensure optimal benefits.

Running Shoes – Do yourself a favor and do not skim on your running shoes. Buy a quality pair of shoes for your interval running sessions. One of the worst things that you can do is run with a cheap pair of shoes. I consider myself a frugal person, but I'm willing to fork over the cash for a quality pair of shoes. I've been running regularly for over 15 years. I don't have shin splints, and have never had any foot or ankle injuries. My legs feel great. I believe a quality pair of shoes is one reason for my injury-free running.

Running Surface – Another important element of pain-free interval training is the running surface that you choose. I recommend grass or a standard 400 meter track. These surfaces are much more forgiving than concrete sidewalks. If possible, find an open field or track to perform your interval work.

The use of quality shoes and a soft running surface such as grass will enable you to train hard, without worrying about nagging injuries such as shin splints.

Time vs. Distance – If you do not have regular access to a standard 400 meter track, you may wish to use time (rather than distance) to measure each interval. For example, rather than running 200 meters, you could simply run hard for 25 to 30 seconds.

You can wear a sports watch on your wrist to check the time of each interval. Time is a convenient interval measure. If you are not sure how much time to allocate to each interval distance, you can perform a brief test at a local track. You will only need to make the drive to the track one time. Time yourself with each distance. Record each distance and time for future reference. You can achieve a quality interval session without official metric measurements.

Laying The Foundation – Clearly, interval running is effective. With that said, one must develop a solid foundation before attempting advanced routines. Many athletes start interval programs without an adequate foundation. These athletes are new to running and not prepared for the intensity of an interval session.

A common byproduct of this mistake is extreme soreness. Following such soreness, the athlete quickly discards interval running from his training repertoire. Do not make this mistake.

If interval running is new to you, develop a solid foundation by starting with longer distance aerobic sessions (ex. 1 or 2 miles). You can then switch to more intense intervals after approximately 4 to 6 weeks. Establish a solid foundation, and then add to it.

HILL SPRINTING

Hill sprinting is a close relative to interval running. If you have access to hills, I highly recommend a regular dose of hill training.

Hill sprinting offers many benefits. You will quickly develop hip flexor power. When sprinting uphill, you must drive the legs forward with a higher than normal knee lift. Consequently, the hip musculature is effectively worked. Hip flexor strength is instrumental for effective sprint abilities. Regular hill sprints will help you to become a more explosive athlete.

Perhaps more importantly, hill sprinting offers a tremendous anaerobic workout. A session on the hills will target both anaerobic systems, while simultaneously improving muscular endurance throughout the lower body.

I typically integrate hill sprinting with various exercises that are performed immediately upon completing the sprint. When choosing a hill, I search for those that can be completed in 30 to 90 seconds. Most of our hill work is done on hills that are completed within approximately 30 to 45 seconds of maximal effort work. Hill sprints are just what the name implies, a full effort sprint. This is no time for a leisurely jog. Run uphill as fast as possible.

Upon finishing the sprint, you can expect to feel fatigue and shortness of breath. Now is the time to truly benefit from hill training. For example, a boxer could immediately begin shadow boxing for 30 seconds. Shadow boxing involves throwing punches in the air, towards an imaginary opponent. A kickboxer could mix punches and kicks. A wrestler could work with a partner. For example, he could push against a resisting partner, in a battle to produce forward momentum. These drills will teach the athlete to fight through fatigue. You will learn to kick/punch/wrestle despite the fatigue that has accumulated from the upward sprint interval.

Another option is the use of resistance exercise upon completing the sprint. For example, drop and perform 20 pushups at the top of the hill. You could also bring a dumbbell or sandbag to the top of the hill. Sprint uphill and then perform a few full body lifts such as a dumbbell snatch or sandbag clean and press. Once again, you will force the body to display power, despite fatigue.

As you can see, your hill training options are endless. Incorporate variety into your workouts. One last sample is provided below.

Sample Hill Workout:

- Sprint Hill
- 15 pushups
- 30 seconds of shadow boxing
- Walk or jog back to the bottom of the hill
- Repeat 8 times

TABATA INTERVALS

If you stay abreast of trends in the strength and conditioning field, you have probably seen the phrase *Tabata Intervals*.

Tabata Intervals get their name from a study that was performed by Dr. Izumi Tabata (and colleagues) at the National Institute of Fitness and Sports in Tokyo, Japan. Dr. Tabata tested several athletes using an interval protocol consisting of 20 seconds of maximum intensity exercise, followed by 10 seconds of rest. This cycle was repeated 8 times (for a total of 4-minutes). I commonly denote this sequence of training with the following abbreviation $8 \times 20w/10r$, where w = work and r = rest (time is in seconds). Essentially, one performs 8 intervals, each consisting of 20 seconds, separated by 10 second rest periods.

After six weeks of testing, Dr. Tabata noted a 28% increase in anaerobic capacity along with a 14% increase in $V_{O2}Max$. The brief, yet highly intense interval program enhanced both anaerobic and aerobic energy systems.

The original study was performed with a mechanically braked cycle ergometer. Each athlete performed the interval protocol five days per week.

In the time since the study, many coaches have applied the *Tabata protocol* to different forms of exercise. Common examples include running, heavy bag punching, and bodyweight exercise (ex. pushups, burpees, and squats).

A quick search of the Internet will lead you to many sample workouts, all utilizing the Tabata protocol. At first glance, it may appear the strength and conditioning industry has gone *Tabata crazy*.

Fortunately, the Tabata protocol is unlike other fitness trends and fads. This particular training style is intense and particularly effective. After 4-minutes, one is quickly convinced of its effectiveness.

Yet, despite this truth, it is equally important to understand that there is nothing magical about the 8 x 20w/10r protocol. The exact duration and rest period are not the true genius behind this protocol. This experiment proved that short, highly intense intervals are effective for the enhancement of both aerobic and anaerobic energy systems.

In summary, you do not need a lot of time to achieve a quality conditioning workout. A 4-minute Tabata interval routine can offer more action than many weekend warriors have seen in a lifetime.

So, should one apply the 8 x 20w/10r protocol to all conditioning workouts?

No!

Many coaches become nearsighted after being introduced to an effective protocol such as the Tabata system. They form the mindset that if it is not Tabata, it is not effective.

Wrong!

Rather than lusting over the 8 x 20w/10r protocol, I suggest that you embrace the true value behind the experiment. Understand the importance of high intensity conditioning work. Do not limit yourself to one interval protocol. There are variations to the 8 x 20w/10r protocol that are equally effective. I am confident that Dr. Tabata would have experienced similar results if he had experimented with a 10 x 15w/10r protocol or a 7 x 25w/10r protocol.

For example, I experimented with the Tabata protocol while jumping rope. I needed more than 8 x 20 seconds. Instead, I had greater success using a 10 x 30w/10r protocol. I need slightly longer intervals on the jump rope. I have been using the jump rope for over 20 years. The shorter 20 second intervals were not enough. I utilized the Tabata genius and made a variation to accommodate my specific needs. This variation could be considered a *Tabata Hybrid*.

Another common hybrid involves changing exercises throughout the Tabata interval workout. For example, rather than working through 8 intervals of one exercise, you could group several exercises into one rotating Tabata cycle.

A sample is provided below which integrates burpees, pull-ups, and bodyweight squats.

Tabata Hybrid Sample

- Burpees x 20 seconds + rest 10 seconds
- Pull-ups x 20 seconds + rest 10 seconds
- Squats x 20 seconds + rest 10 seconds
- Repeat entire sequence 4 times

This workout rotates three movements until twelve 20 second intervals are completed. The entire workout will last 6-minutes. You can expect this 6-minute workout to offer quite a challenge.

To summarize, do not be afraid to make adjustments based on your own specific needs and abilities. Nothing is written in stone. Adjust, experiment, and always think outside the box.

The sample 50 day program described in a later chapter includes one challenge that is built around the Tabata protocol. This challenge, dubbed *Sweet 16*, involves four cycles of Tabata interval work. Each exercise is performed for 8 x 20w/10r. As soon as one exercise is completed, you rest 10 seconds and continue with the next.

SWEET 16

1. Tabata Heavy Bag Punches
2. Tabata Squats
3. Tabata Heavy Bag Punches
4. Tabata Pushups

This routine begins with the following sequence:

- Heavy bag punching x 20 seconds
- Rest 10 seconds
- Heavy bag punching x 20 seconds
- Rest 10 seconds
- Heavy bag punching x 20 seconds
- Rest 10 seconds
- Heavy bag punching x 20 seconds
- Rest 10 seconds
- Heavy bag punching x 20 seconds
- Rest 10 seconds
- Heavy bag punching x 20 seconds

- Rest 10 seconds
- Heavy bag punching x 20 seconds
- Rest 10 seconds
- Heavy bag punching x 20 seconds
- Rest 10 seconds

The punch sequence should be non-stop, consisting of a continuous 1-2-1-2 combination (1 = jab, 2 = cross). These combinations are explained later in this chapter.

As soon as the 8th set of punching is completed, you will rest 10 seconds, before continuing to the second exercise (bodyweight squats). You will perform this exercise with the hands gloved. You will then continue with a second set of Tabata heavy bag, and finally end with a set of Tabata pushups. You can remove the gloves for the pushup portion of the routine. Each exercise must be performed as fast as possible for optimum benefits.

This routine will last 16-minutes. Can't be too bad, right?

I'll let you find out for yourself.

HEAVY BAG TRAINING

To begin this section, I would like to remind you of the analogy about the use of weights for a non-competitive weightlifter. As mentioned, just because you do not compete in the sport of weightlifting, does not mean that you cannot use weight training to aid your development as an athlete.

Let's apply this theme to the heavy bag. You may be thinking to yourself,

"I'm a wrestler, why should I punch the heavy bag. I am not training to box..."

Before skipping this section, please hear me out. The heavy bag is perhaps the ultimate conditioning tool for all athletes. Whether you are training for a combat sport is irrelevant. You will not find many conditioning tools that offer the intensity and effectiveness of an old fashioned heavy bag.

Punching the heavy bag provides an intense full body workout. This style of training is excellent for the core, improves coordination, and develops the non-oxidative energy systems. Furthermore, heavy bag training will develop upper body speed strength.

Athletes are always looking for new ways to improve hand speed and power. Unfortunately, the heavy bag is often forgotten during the search. More elaborate and expensive training tools are selected in place of the bag. Do not make this mistake. If you want to improve punching speed, you need to punch!

As stated by Verkhoshansky, weight training is not adequate for improving the speed of an unloaded movement or movement against a relatively light resistance (1977). Punching with a light pair of gloves constitutes movement against a *small external resistance*. Brief punch-out drills on the heavy bag are excellent for the development of hand speed.

Heavy Bag Training and Intermuscular Coordination

Earlier, I mentioned that **intermuscular coordination** refers to the synchronization of different muscles to cooperate during a given motor task. Intermuscular coordination is necessary when punching or kicking. The coordination required for these actions is best developed through repetitive work such as heavy bag training. When looking for sport-specific ways to enhance power and speed, do not be so quick to overlook the old fashioned heavy bag.

Repetitive training enhances mechanical efficiency and motor unit recruitment patterns. You gain efficiency in movement, as you become more accustomed to performing a specific skill (ex. punching or kicking).

One last benefit of heavy bag training is the *fun factor*. Let's face it, there are few training drills as enjoyable as punching a bag. If I had to choose between running or beating the shit out of a heavy bag, I'll choose my heavy bag every time.

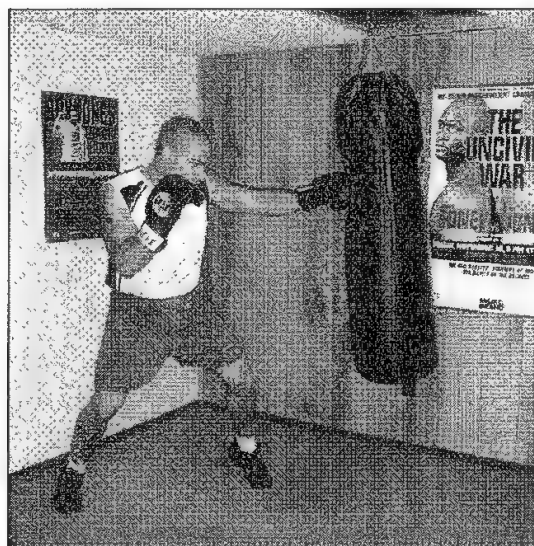
EQUIPMENT

Before we begin, let's first review some general equipment requirements.

1. **Training gloves and wraps** - Protect the hands. Save your hands for the battlefield. I recommend a quality pair of punching gloves and hand wraps. Training gloves typically range from 12 to 16 ounces in weight.
2. **Weight of the bag** - I recommend using a heavy bag that is 100 pounds or more. Lighter bags often cause excess movement (ex. swinging sideways).

3. **Bag Styles** - Two common bag choices include freestanding bags and heavy bags that hang (ex. from a rafter). If possible, I recommend a bag that hangs from the ceiling. Freestanding bags may fall over or wobble from side to side.

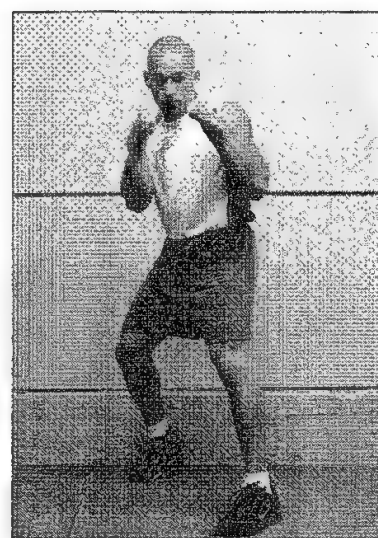
If you are unable to hang a bag, choose a quality freestanding bag.



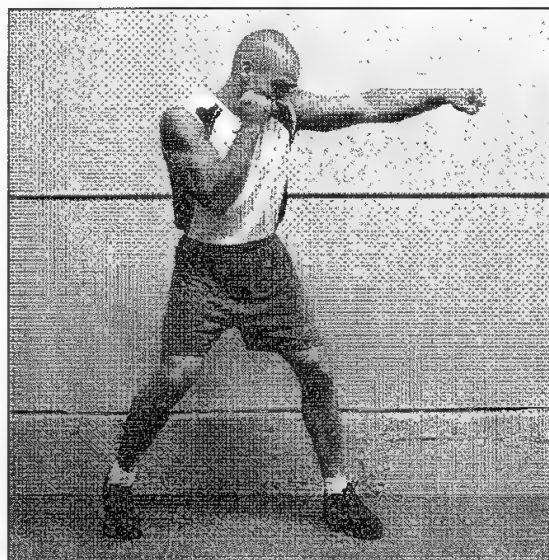
BASIC PUNCHES

Before discussing the specific heavy bag drills, let's begin with a brief overview of four basic punches. I will describe these punches from the orthodox boxing stance, where the left hand is in front, the right hand in the rear. This is the stance most commonly used by right-handed fighters.

Left-handed fighters (southpaws) would reverse the punches below, leading with the right hand, with the left hand in the rear.



Jab - The jab is thrown quickly with the lead hand. When squared up to fight, the jab is the closest punch to your opponent. The jab is used to score points and create openings for power punches. Your knees should be slightly bent with the chin down. The jab must be thrown quickly without cocking. Twist your arm in a corkscrew motion before impact. After throwing the jab, retract your hand quickly back to the starting position.

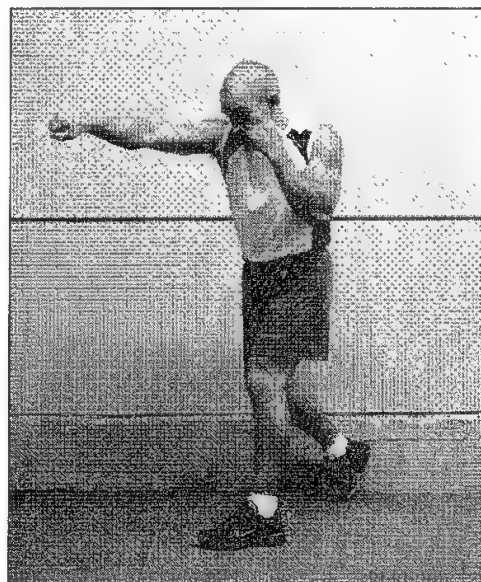


Do not drop **either** hand while jabbing. Many fighters drop the non-punching hand when throwing the jab, thus exposing themselves to counter punches. Another mistake is to drop the jab hand as you retract towards your face. Once again, you leave yourself open to counter attacks.

When calling out a combination, I use the number 1 to designate the jab. For example, a 1-1 is a double jab.

Straight Right Hand (commonly referred to as the *cross*): The straight right hand (or straight left hand for southpaws) is a power punch that is often thrown behind the left jab. The cross must be thrown directly from your face. It should be thrown down a straight line, towards your target. Pivot the hips *into* the punch as you deliver the blow. You will generate power by violently twisting the hips behind the punch.

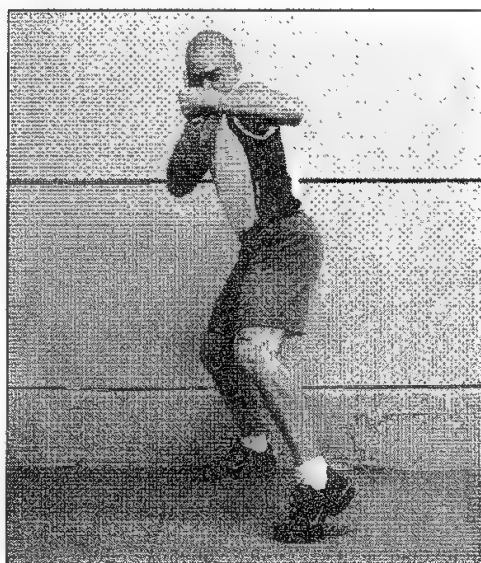
I use the number 2 to designate the cross. A 1-2 is a left jab + right cross combination.



Left Hook: The left hook is thrown with a bent arm. Your arm should resemble the letter "L". When throwing the hook, start by shifting your weight to the right leg, as you rotate your body to the right.

Pivot on the ball of your left foot, as you snap the left arm across the body, while maintaining the "L" shape. The power of this punch comes from the hips and core. Do not make the mistake of throwing a wide, looping hook. A short, compact hook is far more effective.

The left hook can also be thrown to the body. A solid left hook to the liver area (high in the right upper abdomen, behind the ribs) will freeze your opponent like kryptonite.

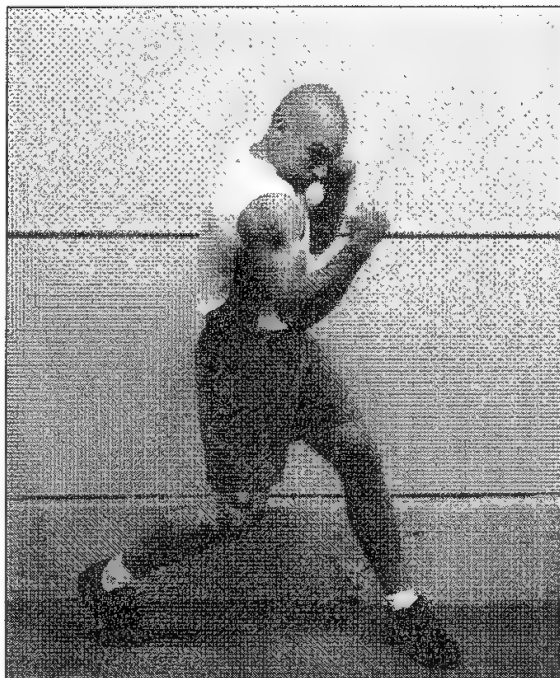


This chapter began with a quote from former Junior Welterweight boxer Micky Ward. Micky became famous for his vicious left hook to the body. He put many opponents down on the canvas with this deadly punch.

I use the number 3 to designate the hook. A 1-2-3 is a left jab + right cross + left hook combination.

Uppercut: Combat athletes commonly neglect the uppercut. This is unfortunate, as the uppercut is a powerful punch on the inside that is difficult to defend. You should throw the uppercut while fighting on the inside. Do not throw this punch from a distance, as your opponent will easily counterpunch with a left hook. When throwing the uppercut, bend your right knee slightly while simultaneously dropping the right shoulder to your right side. Bend slightly into a crouch position.

Do not exaggerate this movement, as a skilled fighter will be able to detect the punch. Keep the hands up by your face as you form the semi-crouch position.



Next, rotate your hips forward, as you push off the ball of your back foot. The right arm should stay close to the body as it moves upward in a semi-circle motion. Drive your right hand up towards the target. Drive the hips up as you connect to maximize power.

Former heavyweight champion Mike Tyson threw a brutal uppercut, which put many opponents down for the count.

I use the number 4 to designate the uppercut. A 1-2-3-4 is a left jab + right cross + left hook + right uppercut combination.

HEAVY BAG DRILLS

The heavy bag allows one to target many objectives. Two obvious choices include skill training and conditioning. This section will focus on conditioning. A skill training session can also include conditioning elements, but much of the work is dedicated to a specific fighting style. For example, a boxer could use the

heavy bag to practice a new combination that he has learned from his coach. Practice makes perfect, and the heavy bag is the ideal target.

When focusing on conditioning, the heavy bag can be used for several striking drills. You can throw punches, kicks, elbows, or knees. The bag is an excellent sport-specific conditioner for fighters. One reason for the heavy bag's effectiveness is understood when you consider that specific muscle groups perform each exercise. For example, the upper body is involved in punching. During an intense round of combat, the products of anaerobic metabolism accumulate, resulting in fatigue and reduced punch output. This scenario is evident when a boxer can no longer keep his hands up. The burning sensation in the shoulders and arms is the result of an intense round of action. The exercise (punching) has caused fatigue in the punching muscles (shoulders and arms). Clearly, the body's adaptation to anaerobic work is at least partially local in nature (Siff, 2003a).

Furthermore, it was proven in a recent study that "repeated anaerobic exercise consistently elevates blood lactate, which leads to a training effect of enhanced ventilatory buffering of metabolic acidosis consequently generating increases in anaerobic threshold values" (Crews, 2001). The findings from this study show that repeated efforts of high intensity work on the heavy bag will increase the athlete's anaerobic threshold, therefore enabling him to throw more punches each round.

These words speak volumes for the importance of sport-specific training. It becomes clear that conditioning drills such as running are not enough. Clearly, these drills are effective, but much of your conditioning must be specific to your particular event. Running is an excellent *general conditioner*, but it will not enable the upper body to maintain a high punch output. Conditioning the legs is not enough. The upper body must also be targeted with explosive, anaerobic drills. The heavy bag is ideal for this objective. Additional benefits include improved coordination, enhanced hand speed and punching power, and greater strength endurance.

On the pages that follow, I have listed several conditioning drills that will intensify any heavy bag routine.

Tabata Heavy Bag - As mentioned in the previous section, the Tabata protocol can be applied to the heavy bag. I recommend using straight punches for this drill to minimize lateral bag movement. You will maintain a faster pace by using straight punches (ex. 1-2-1-2). Each 20 second work period will include an all-out effort, consisting of one non-stop combination. Continue to throw punches for the entire 20 second period. Speed and power are likely to decline throughout

the 4-minute session. Do not become discouraged. Fight through the fatigue, striving to throw as many punches as possible during each interval.

Power Boxing – *Power boxing* involves short, yet highly intense rounds on the heavy bag. Each round will range from 60 to 90 seconds, followed by 30 to 60 seconds of rest. These rounds will be dedicated to power punches. You will throw multiple punch combinations, each with maximum power.

This style of training will condition the body to maintain an intense pace. It is rare that a fighter will throw more than 30 or 40 power punches in one round of competition. Much of the round involves setting your opponent up with various feints and jabs. Power boxing will prepare you to maintain intensity, while quickly recovering between power punch combinations.

Recovery between rounds is just one part of the recovery process. It is equally important to recover *during* the round. You may have heard the old phrase that a fighter has “punched himself out”. This phrase is used to describe a fighter who becomes exhausted after engaging in a fierce offensive attack. When fatigue sets in, you become vulnerable to your opponent’s counter attack. For this reason, it is important to condition the body to recover quickly between combinations.

Punch-out Drills - A punch-out drill involves a string of high-speed punches thrown in rapid succession without rest. Common punch-out intervals range from 15 to 60 seconds. During these drills, the fighter will throw non-stop punches. I recommend straight punches during this drill to reduce bag movement. For example, you will throw a non-stop 1-2-1-2 (1 = jab, 2 = cross).

This style of training can be used on its own (ex. 6 x 30 second punch out drills, each separated by 60 seconds of rest) or as part of a skill training workout. For example, you could finish a 3-minute round with a 30 second punch-out drill. The first 150 seconds of the round will be dedicated to *boxing* the bag. Circle the bag, throwing various combinations. You will then finish the last 30 seconds with a punch-out drill. This style of training will teach you to finish each round strong. This is an important aspect of the fight game, as many rounds are won in the final seconds. Many fighters are taught to *steal* rounds, meaning they try to score punches at the end of the round to win points on the scorecards.

10 x 10 System – In the past, I have written about a drill dubbed the *10 x 10 System*. I created this drill to improve speed, power, and recovery abilities.

Let’s review this drill, and then examine how you can apply this concept to your training routine.

The 10 x 10 System is just what the name implies. You will throw ten non-stop punches, reset briefly, and then continue with another ten punch combination. You will throw straight punches for this drill. You will throw a non-stop 1-2-1-2-1-2-1-2 (1 = jab, 2 = cross). Throw each punch with maximum power.

Upon completing the 10-punch sequence, reset your feet and repeat the drill. It should only take 1 or 2 seconds to reset. Do not exceed 2 seconds before throwing a second combination, once again focusing on speed and power.

Continue this sequence ten times before resting. Each cycle of the 10 x 10 System consists of 100 punches (10 x 10). Repeat this drill for 4 to 10 cycles. Limit your rest between cycles to approximately 60 seconds.

Sample Session

- 1-2-1-2-1-2-1-2-1-2
- Reset
- 1-2-1-2-1-2-1-2-1-2
- Reset

Continue for 10 sets of 10 punches (100 total). Rest for 1-minute or less and continue.

This drill is one of the most useful conditioners available. You will condition the body to repeatedly throw quality power punches throughout each round. It is one thing to maintain a high volume of punches per round, but it is much more effective if you can maintain a high volume of **quality** punches each round.

This drill is as *sport-specific* as it gets for high-speed conditioning. Rarely will you throw more than ten consecutive punches during a competition. Instead, each round will consist of brief, yet explosive combinations. You must quickly reset after throwing one combination, ready to continue with another. Punch quality must not decline throughout the round.

Those who are familiar with my past writings may read this section and say:

"Ross, you've discussed the 10 x 10 System before..."

This is a valid statement. I have included this topic not as a way to fill up space, but rather to convey a training style that I encourage you to adopt. The true value of the 10 x 10 System is not that you repeatedly throw ten explosive punches. You must dig deeper to unveil the real significance. In short, this drill teaches the athlete to explode with quality punches throughout the fight.

Do not limit yourself to this particular drill. Just as an athlete should incorporate variety when running intervals, he should incorporate variety when hitting the heavy bag. This drill is essentially a form of high intensity interval training on the heavy bag. I encourage you to use this protocol with various combinations. For example, this drill could be applied to the fundamental 1-2-3 combination (left jab, right cross, left hook). Southpaws would invert this combination with a right jab, left cross, and right hook.

Rather than performing 10 x 10, you could throw 3 (*punches*) x 25 (*combinations*). Each three-punch combination will be thrown with maximum power and speed. Below I have provided some additional combinations that you can apply to this protocol:

1-2-1-2 (left jab, right cross, left jab, right cross) – This four-punch combination is very common in the fight game. You could perform 4 (*punches*) x 25 (*combinations*), for a total of 100 power punches.

1-2-1-2-3 – Add a left hook to the previous combination. Perform 5 x 20 for a total of 100 punches.

1-2-3-4 (left jab, right cross, left hook, right uppercut) – Another variation could include the right uppercut (left uppercut for southpaws).

1-1 (jab, jab) – The jab is not considered a power punch, but an effective jab can surely earn your opponent's respect. Former world champion Larry Holmes possessed one of the best jabs in the history of boxing. He could hurt his opponent with the lead jab. Practice throwing hard jabs in succession to develop this ability. For example, throw 2 x 25 for a total of 50 jabs.

The possibilities are endless. One workout could integrate several combinations, all thrown with the intensity of the 10 x 10 System. For example:

- 10 x 10 System – Perform 3 sets (each set consists of 100 punches)
 - **Combination** = 1-2-1-2-1-2-1-2-1-2
- 3 x 25 – Perform 3 sets (each set consists of 75 punches)
 - **Combination** = 1-2-3
- 4 x 25 – Perform 3 sets (each set consists of 100 punches)
 - **Combination** = 1-2-1-2
- 5 x 20 – Perform 3 sets (each set consists of 100 punches)
 - **Combination** = 1-2-1-2-3

This workout consists of 12 *rounds*. Rest 1-minute or less between rounds.

Each round will last approximately 1-minute. During each minute, you will throw every punch with maximum speed and power.

This style of training strips a conventional round of combat down to its essentials. You remove the lulls from each round, and instead focus only on the explosive aspects. Remember, you win fights by fighting. Condition yourself for these offensive moments. This style of training will work wonders for your fight conditioning.

Isometric Punches + Power Boxing

You can combine the isometric punch drills discussed earlier with the power boxing protocol, thus capitalizing on the static-dynamic after-effect. For example, train each punch (jab, cross, uppercut, hook) with isometric holds. Upon completing the isometric punch drills, you can proceed with the sample workout on page 140.

A sample isometric sequence could include:

Left Jab	x 3 seconds at starting, mid-range, and end positions x 4 sets
Right Cross	x 3 seconds at starting, mid-range, and end positions x 4 sets
Left Hook	x 3 seconds at mid-range x 4 sets
Right Uppercut	x 3 seconds at mid-range x 4 sets

Proceed with 8 to 12 power boxing rounds

HEAVY BAG FREQUENCY

Before continuing to the next section, I would like to discuss an often debated topic about the frequency of heavy bag workouts. There are those who believe the heavy bag should only be used 2 to 3 days each week, while others suggest daily training (5 to 6 days each week).

I have experimented with both sides of the fence. In my opinion, there is no correct answer to this question. First, experience is a critical factor. An experienced fighter can hit the heavy bag much more often than the novice trainee. The same logic can be applied to a sport such as Track and Field. A competitive sprinter will run much more often than a casual fitness enthusiast. These athletes specialize in running and have years of experience on the track. If sprint work is new to you, you cannot expect to keep pace with these athletes.

As a youngster, I often hit the bag daily and never had any overuse injuries. We were expected to hit the bag during each training session. We avoided injury and overuse problems by varying intensity throughout the week. For example,

one day would be dedicated to more intense conditioning work (ex. punch-out drills). The following day would include lighter drills, such as working on the jab and lateral footwork.

Essentially, you can hit the bag more often if you vary intensity throughout the week. You must also consider your remaining workload. Answer the following questions. Are you using the heavy bag as a means of cross training for another event? Are you training for a boxing or kickboxing match?

It is important that you determine your specific training objectives. You must then plan the entire week. Usually, you will **not** hit the bag daily, simply because of your additional workload. For example, it would be difficult to hit the bag on a daily basis while working through the 50 day program contained at the end of this book. It is more sensible to hit the bag on an every-other-day schedule when following this program.

In most cases, I recommend hitting the bag between 3 and 4 days each week (if you are training to fight). If the bag is simply a means of general conditioning for another sporting event (ex. wrestling), you can achieve numerous benefits with 2 sessions each week. As you can see, there are few (if any) *rules*. I simply caution against back-to-back sessions dedicated to the intense drills (ex. power boxing) detailed in this chapter.

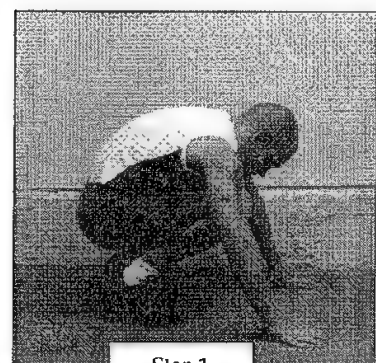
If you choose to perform the conditioning drills from this chapter, give yourself a day in between sessions. *Off days* can be dedicated to skill work, minus the explosive conditioning drills. In addition, do not start a skill session or sparring session with isometric drills. You must be fresh when sparring and learning new skills. Save these drills when the focus is power and speed development.

Remember, it is important to train hard, but equally important to train smart. You are not training to fight a bag, you are training to fight a person. Do not leave all of your strength in the gym.

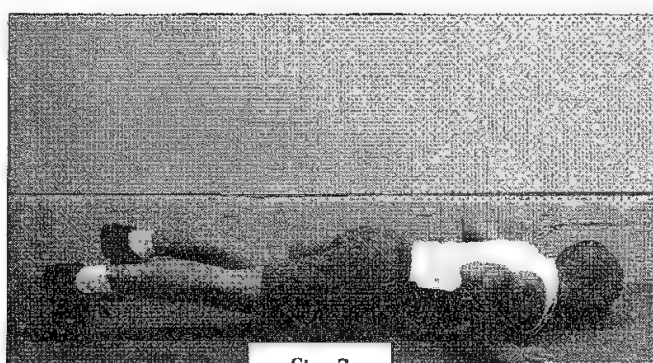
GPP DRILLS

Your general physical preparedness will be instrumental in determining the frequency and intensity of subsequent training sessions. As GPP improves, you can train harder, and more frequently. GPP will enhance all aspects of training.

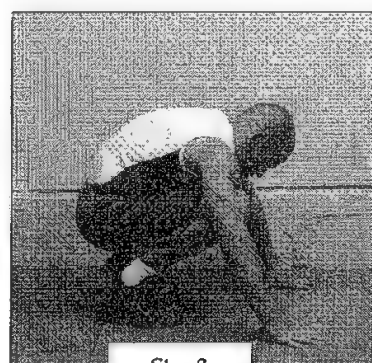
Let's start by reviewing the exercises that will be required. Burpees will top the list...



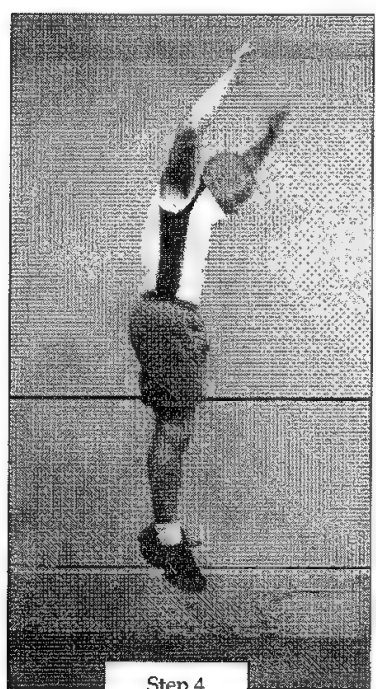
Step 1



Step 2



Step 3



Step 4

Burpees – If you are familiar with my training methods, there is a good chance that you have performed burpees. Burpees are perhaps the ultimate bodyweight conditioning exercise. Burpees will strengthen the entire body, while developing indomitable endurance, both muscular and anaerobic.

Start from a squat position with hands on the ground. Next, kick your feet back (Step 2) into the downward position of a pushup. From here, you will push up with the arms, while simultaneously thrusting the feet up to the starting position. You will essentially perform a pushup, as you return the feet to the starting position. You will complete the movement by exploding into the air (Step 4). As soon as you land, drop back to Step 1 and continue at a furious pace.

180-Degree Burpees – The 180-degree burpee offers one means of progression from the traditional burpee. This variation requires a 180-degree jump in place of the traditional squat jump (step 3 to 4 of the burpee). The movement begins with the exact sequence. You will drop down, perform the pushup, thrust the feet up to the starting position, and then jump upwards while rotating 180-degrees. You will land facing the opposite direction that you started from. Upon landing, you will immediately drop back to the ground, perform the pushup, and continue with another 180-degree jump, this time landing in the direction that you started.



Step 4a



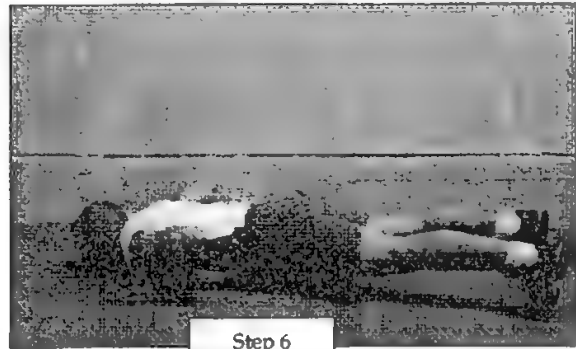
Step 4b



Step 4c



Step 5



Step 6

You must continue this back and forth jumping sequence. Alternate between left and right jumps. For example, begin with a 180-degree jump, moving from right to left. In the next repetition, proceed with a 180-degree jump, moving from left to right. Continue back and forth at a brisk pace.

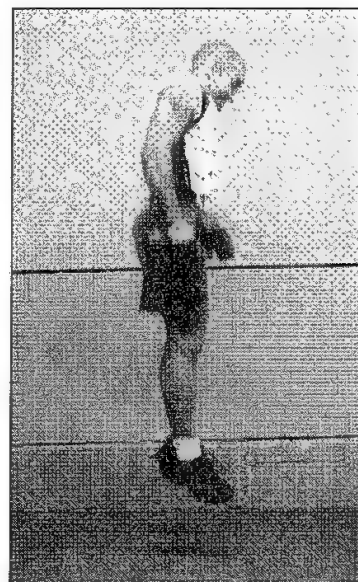
This variation is tremendous for full body conditioning, while also enhancing coordination, agility, and body awareness.

Four additional burpee variations are listed next.

Knee Tuck Burpee – This variation is identical to the traditional burpee except for the jumping style. With this movement, you will perform a knee tuck when executing the jump. Jump upward, bringing the knees to the chest.

Dumbbell Burpee - A challenging variation can be performed while holding dumbbells. You will perform the traditional burpee, only this time you will hold dumbbells throughout the movement.

The added weight will make the jumping portion much more difficult.



Burpee Pull-up Combination - This variation is to be performed beneath a pull-up bar. You will perform a traditional burpee under the bar. Upon jumping from the crouch position, you will grab the pull-up bar and perform a full-range pull-up. Immediately drop from the pull-up bar and continue with another repetition.

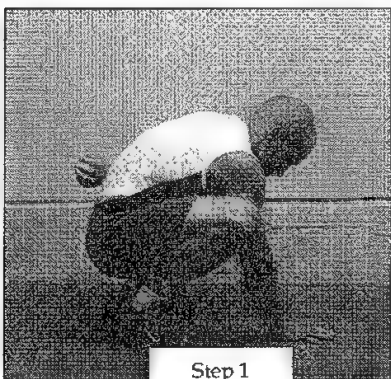
For an added challenge, you can add a handclap in the air while performing the pull-up. This variation will surely crank up the intensity of any routine.

One-arm Burpee - The one-arm burpee offers the perfect blend of strength and conditioning. This exercise integrates the conditioning benefits of the burpee with the strength benefits of a one-arm pushup. You get the best of both worlds with one challenging movement.

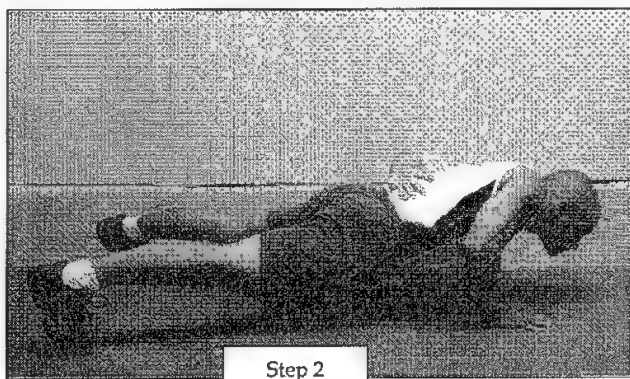
You should be proficient with one-arm pushups before attempting this exercise.

The one-arm burpee is illustrated on page 146.

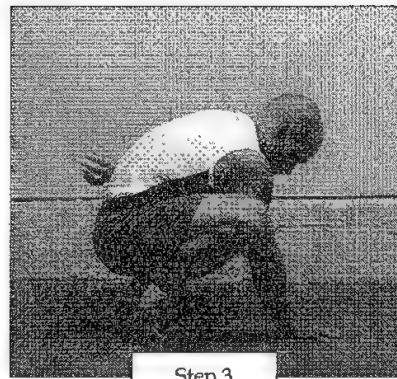
One-arm Burpee



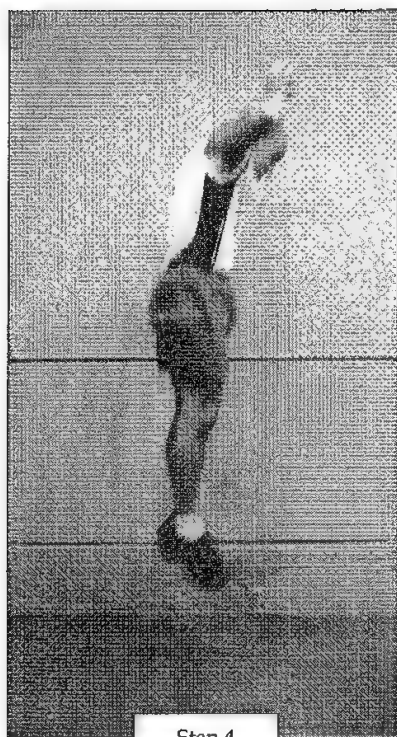
Step 1



Step 2



Step 3



Step 4

Start from a squat position with one hand on the ground. Next, kick your feet back into the downward position of a one-arm pushup. From here, you will push up with one arm, while simultaneously thrusting the feet up to the starting position. You will essentially perform a one-arm pushup, as you return the feet to the starting position. You will complete the movement by exploding into the air.

As soon as you land, drop back to Step 1 and continue with the opposite arm (ex. left arm).

VARIATION OVERKILL

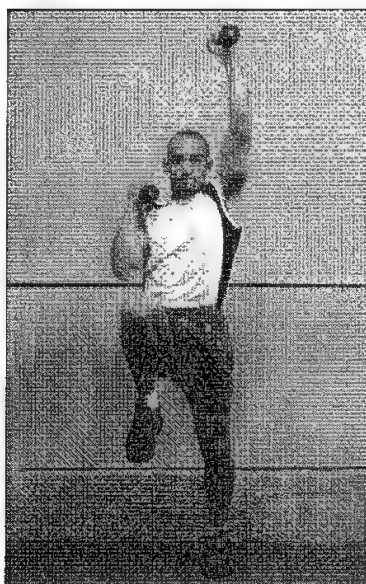
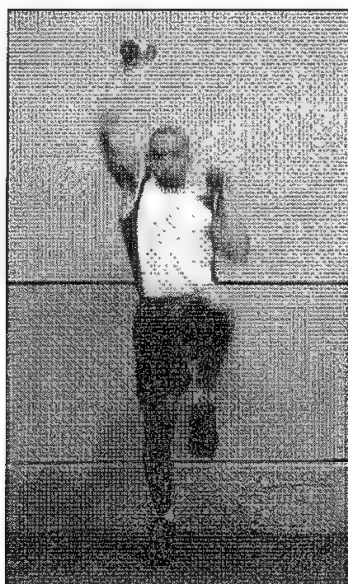
Each of the previous variations is useful for one specific reason. These movements can all be performed with a rapid cadence. When performing burpees, you must move through the exercise at a furious pace. The primary goal of any burpee routine is to improve total body conditioning.

To ensure the optimal conditioning benefit, one must move through the exercise sequence as fast as possible.

I have seen several variations that do **not** follow this basic principle. One variation called for the athlete to drop down (step 2) and perform 5 traditional pushups, then perform 5 divebomber pushups, then jump, and finally throw 10 punches in the air. Although such an exercise sequence may offer benefits such as muscular endurance, it is no longer a burpee. Burpees must be performed fast. You need to drop down and jump at a fast clip. If you are only performing one jump every 15 seconds, you are missing the point of the exercise.

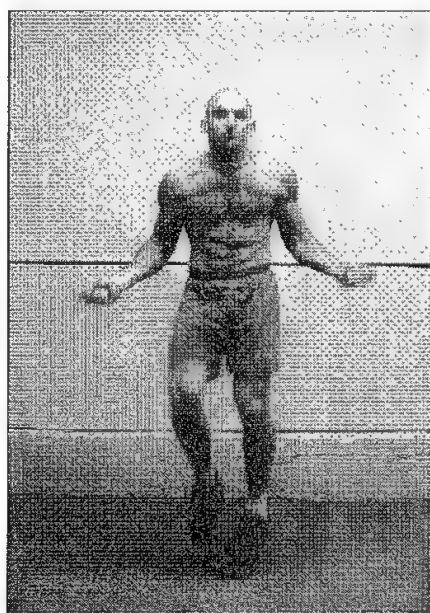
Do not complicate an effective exercise.

ADDITIONAL MOVEMENTS



A pair of 5 pound dumbbells can be quickly converted into an effective conditioning tool. I call this drill the **high knee dumbbell press**.

You will run in place, with high knees, while alternating a high-speed overhead press with light weights. Press the left arm as you raise the right leg, and vice versa.



The **jump rope** is another personal favorite. You will be hard fetched to find a more effective conditioning tool. Rope work will enhance agility, coordination, and endurance. I recommend a light weight speed rope to maximize the high-speed conditioning effect. Two useful conditioning drills include:

Sprint In Place: Spin the rope at top speed, while raising the knees high with each turn of the rope.

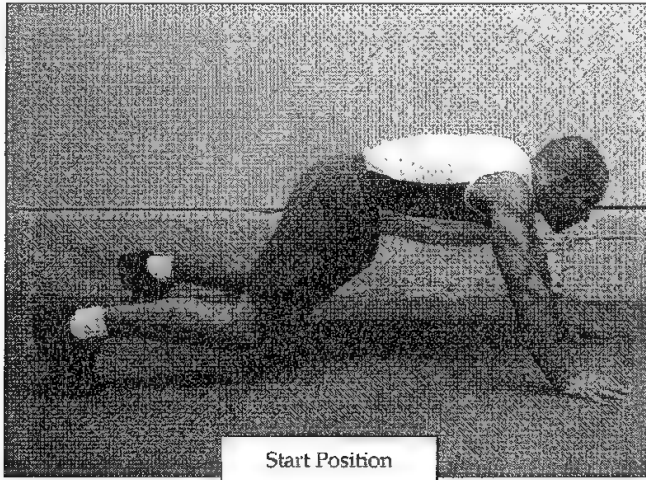
Double Unders: Make two turns of the rope for every one jump. Keep your feet together and turn the rope fast to allow two full turns for every jump.

Split Jumps - Begin with the hands on the hips. Your chest and head will be held high, with your weight on the balls of the feet. Shuffle the feet quickly, emphasizing movement of the hips.

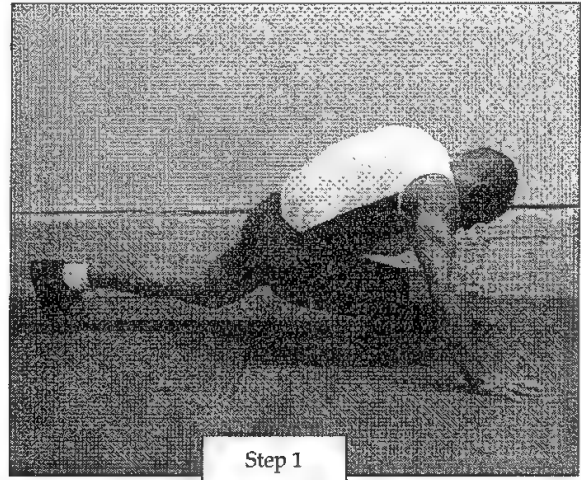


Jumping Jacks - Begin with the feet slightly narrower than shoulder width. The arms should hang by your sides. Perform short jumps, spreading the legs to each side while lifting the arms laterally over the head. You can clap the hands together to stress this movement. Maintain a brisk pace, striving to maximize the number of reps performed during each timed drill.

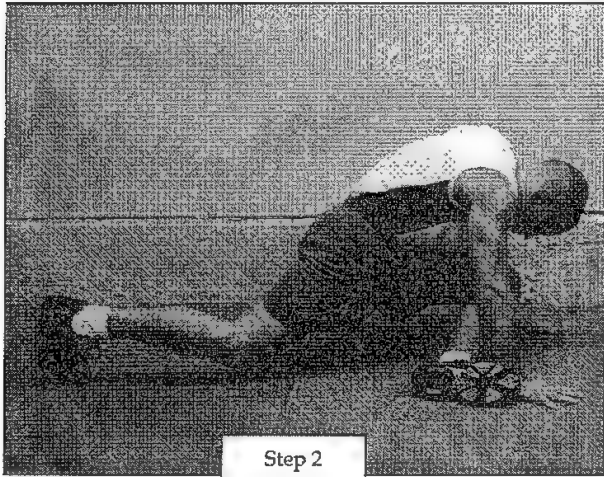




Start Position



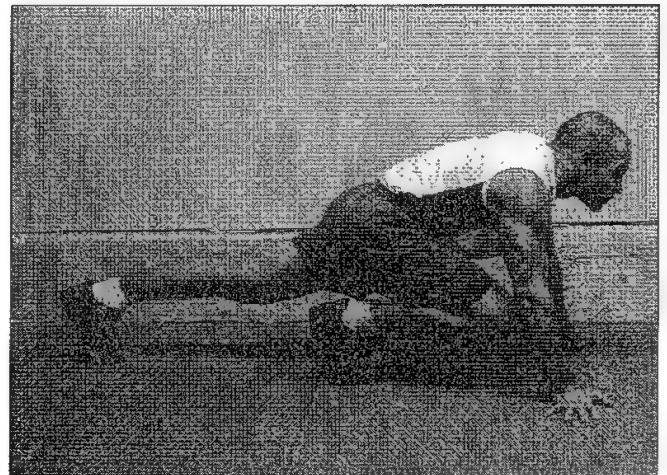
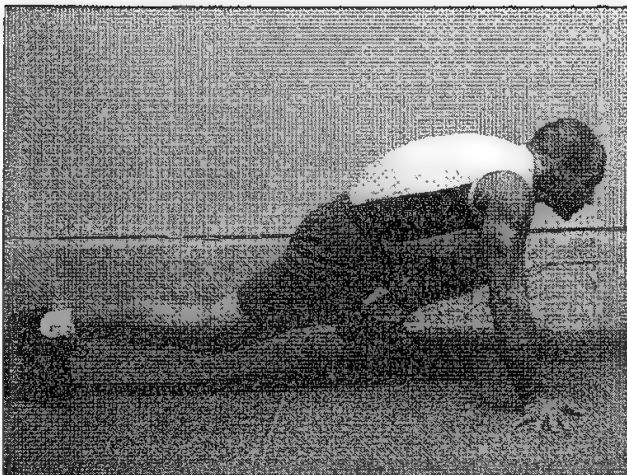
Step 1



Step 2

Grasshoppers are an excellent conditioning and core strengthening movement. Begin with your hands and feet touching the floor. Start the movement by bringing your right foot underneath the body until it touches your left hand. After touching your hand, return the right foot to the starting position and repeat the movement by bringing your left foot across the body to your right hand. Continue this back and forth motion at a brisk pace.

Mountain Climbers - With the hands stationary, alternate the feet back and forth. One leg should be tucked, and one leg extended, with your weight on the balls of the feet.



I am sure that you are familiar with many of these exercises. I have described these movements in previous writings. We will now continue with more important information. Remember, the exercise itself is largely insignificant. The most important factor is **how** you use the exercise.

We will integrate numerous drills into several GPP workouts, which will be performed weekly. Exercise selection will vary from week to week. We are training for physical improvements, not adaptation to one particular exercise. As a fighter, there is no need to become a jumping jack champion. You are training to fight, not for the jumping jack Olympics. Use these exercises to enhance your conditioning. Never limit yourself to one or two movements. Each movement offers unique benefits.

I will now list five GPP workouts, each used in the sample 50 day training program. These workouts are brief, yet intense. Your goal is to work through each drill as fast as possible.

GPP WORKOUT #1

- Burpees x 30 seconds
- Jumping Jacks x 30 seconds
- High Knee Dumbbell Press (5 pounds) x 30 seconds
- Shadow Box x 30 seconds

Repeat the entire circuit 5 times without rest

Workout Summary – This workout consists of four different exercises. You will perform each exercise for 30 seconds, striving to perform as many repetitions as possible during the 30 second block. Use the shadow boxing portion of the drill to throw several combinations. You can integrate kicks and punches together if you wish.

As soon as you complete one exercise, you will immediately transition to the next movement. There is no rest between exercises. You will repeat this circuit five times. The workout will last 10-minutes.

GPP WORKOUT #2

- Burpees x 30 seconds
- Jumping Jacks x 30 seconds
- Split Jumps x 30 seconds
- Burpees x 30 seconds

-
- Jumping Jacks x 30 seconds
 - Mountain Climbers x 30 seconds

Perform 5 rounds with 30 seconds rest between rounds

Workout Summary - This workout consists of four different exercises. You will perform each exercise for 30 seconds, striving to perform as many repetitions as possible during the 30 second block. Each circuit requires three minutes of non-stop exercise. Upon completing one circuit, you will rest 30 seconds, before continuing with the next circuit. You will perform five circuits.

GPP WORKOUT #3

Rounds One and Three

- Burpees x 30 seconds
- Jumping Jacks x 30 seconds
- Split Jumps x 30 seconds
- Burpees x 30 seconds
- Jumping Jacks x 30 seconds
- Bodyweight Squats x 30 seconds

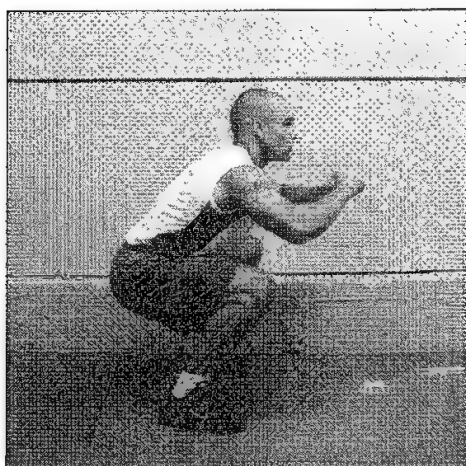
Rounds Two and Four

- Burpees x 30 seconds
- Jumping Jacks x 30 seconds
- Split Jumps x 30 seconds
- Burpees x 30 seconds
- Jumping Jacks x 30 seconds
- Pushups x 30 seconds

Rest 1-minute between rounds

Workout Summary - Each circuit in this workout consists of four different exercises. The fourth exercise will alternate between bodyweight squats and pushups. You will perform bodyweight squats during rounds one and three. You will perform pushups during rounds two and four. The workout consists of four rounds, each lasting for three minutes. You will rest one-minute between rounds.

During each round, you will perform each exercise for 30 seconds, striving to perform as many repetitions as possible during the 30 second block.



When performing **bodyweight squats**, you can choose either a flat-footed version (as illustrated), or a Hindu squat variation, where the feet rise up on the toes during the downward motion.

While there are those who swear by one style or another, I have used each variation, and enjoy both. My recommendation is that you find a squatting style that is comfortable for your unique body type.

One possible advantage of the flat-footed version is that you will probably be able to achieve more repetitions during the 30 second block. Most athletes can maintain a faster speed with this variation.

With that said, I have seen people who experience knee pain from one version, but not the other. Ultimately, you must choose a squatting style that you enjoy. You will feel your legs working with either style.

GPP WORKOUT #4

- 100 Rope Turns (jump rope)
- 10 Burpees
- 10 Pushups
- 10 Bodyweight Squats

Repeat the entire circuit 10 times as fast as possible

Workout Summary - This workout consists of four different exercises. You will begin with 100 rope turns on the jump rope. Choose the sprint in place method of rope skipping for this drill. If you prefer a greater challenge, you can try this workout with the double under style of rope skipping. Following the jump rope sequence, you will perform 10 repetitions of burpees, pushups, and bodyweight squats. You will work through each exercise as fast as possible, with no rest between movements. You should strive to complete this workout as fast as possible. Take rest breaks only when necessary. In time, you will develop the work capacity to push through the entire routine quickly, without stopping.

GPP WORKOUT #5

- Burpee Intervals

Perform 4 to 6 rounds, depending on your condition.

Burpee intervals consist of the following sequence:

- Burpees x 30 seconds
- Shadow Boxing x 30 seconds

Repeat this circuit three times without rest. You will then rest one-minute and repeat the circuit. Each circuit lasts for three-minutes. If this is too strenuous, you can begin by performing two-minute circuits (two trips through the circuit, as opposed to three).

When performing burpee intervals, you will perform 30 seconds of burpees, and immediately follow with 30 seconds of shadow boxing. You will continue this pattern for an entire two or three-minute round. You will then rest one-minute before continuing with the next round.

Throughout the shadow boxing portion of the drill, you should focus on throwing swift punches in combination. The purpose of this drill is to train the body to respond when fatigued. The burpee portion of the drill will cause fatigue. You must then fight through the fatigue by shadow boxing. Do not view the shadow boxing portion of the drill as active rest. You should be working hard, striving to throw quality punches in succession.

Below I have listed several progressions:

Beginner Program

- 4 x 2-minute rounds with 1-minute of rest between rounds

Intermediate Program(s)

- 6 x 2-minute rounds with 1-minute of rest between rounds
- 4 x 3-minute rounds with 1-minute of rest between rounds

Advanced Program

- 6 x 3-minute rounds with 1-minute of rest between rounds

Master's Program

- 6 x 3-minute rounds with 30 seconds of rest between rounds

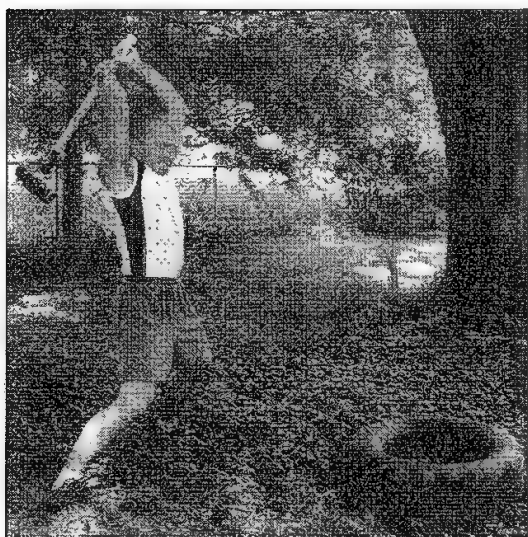
Burpee intervals have long been one of my favorite conditioning drills. This style of training will prepare you to fight through fatigue. The ability to display skill under demanding conditions is largely a unique skill in itself. It is not enough to demonstrate skill when the body is fresh. A fighter must display skill, despite unbearable fatigue. The only way to develop this ability is by training for this situation. Burpee intervals offer the ideal solution.

DENSITY TRAINING

Density training has become popular in recent years. Although the phrase *density training* may be new, the general concept behind this style of training has been around for ages.

Consider that dense is defined as *having a high mass per unit volume*. Density training therefore involves generating a high mass (of exercise) per unit (of time).

Your goal during a density training session is to perform *as much as possible* in a given timeframe. Heavy bag training is a perfect example. As a youngster, my coach would challenge us to throw as many punches as possible during a three-minute round. We (the fighters) would compete with each other to throw the most punches each round. Although we did not use the phrase *density training*, we were applying the general concepts to our heavy bag routines.



Another variation can be applied to a high repetition goal. For example, how long will it take you to swing a sledgehammer 100 times? This sample is a form of density training. Your goal is to swing the sledgehammer as fast as possible. You should continually strive to reduce the time required to fulfill this objective. When 100 repetitions no longer pose a challenge, you can either increase the weight of the sledgehammer or increase the number of swings (ex. 200 reps).

In the illustration above, I am swinging the sledgehammer into an old tractor tire. A large tire is a perfect target for a sledgehammer swinging session.

Density training is useful with several exercises. An abbreviated list is provided below:

1. **50 meter sprints** – Sprint 50 meters as many times as possible in 10-minutes. How many sprints can you perform?
2. **Sledgehammer swinging** – Swing a sledgehammer for 10-minutes. How many swings can you perform in 10-minutes?
3. **Heavy bag training** – How many punches can you throw in a 3, 5, or 10-minute round?
4. **Dumbbell Snatches** – How many dumbbell snatches can you perform in 10-minutes? Dumbbell swings also work well with this style of training. You can even mix the two, alternating one exercise after the other (ex. 5 snatches left arm, 5 snatches right arm, 5 swings left arm, 5 swings right arm).
5. **Burpees** – How many burpees can you perform in 10-minutes?
6. **Rope climbing** – How many times can you climb a 15-foot rope in 10-minutes?
7. **Sandbag Clean and Press** – How many times can you clean and press a 100 pound sandbag in 10-minutes?

As you can see, the possibilities are endless. I encourage you to approach all conditioning workouts with the *density mindset*. Perform *as much as possible* during each session. Forget about coasting through rounds on the heavy bag. Maximize your time and minimize the bullshit.

WARRIOR CHALLENGES

The sample program provided in this manual utilizes five Warrior Challenges. One challenge is performed every five days. For example, during the first seven days, you will perform a challenge on Days 1 and Day 6. Each challenge integrates several high-speed conditioning drills. These routines are designed to enhance physical and mental abilities.

Your goal is to perform each challenge as fast as possible, with as many repetitions as possible, with as much intensity as possible. In short, these challenges will force you to dig down and fight through the fatigue.

When a challenge no longer poses a *challenge*, it is time to pick up the intensity and incorporate more difficult exercise variations.

Let's now review each challenge.

I. THE MAGIC 50

Perform 5 circuits of the following:

- 5 Dumbbell Snatches Per Arm
- 5 Dumbbell Swings Per Arm
- 10 Burpees
- Rest 60 seconds and repeat

Continue until you have performed five complete circuits. Limit rest to 60 seconds or less between each circuit. Advanced athletes will work through the entire routine with minimal rest.

The total workout consists of 50 dumbbell snatches, 50 dumbbell swings, and 50 burpees. This routine is brief, yet extremely intense. If the workout does not pose an adequate challenge, you should increase the weight of your dumbbell. More iron always equals more intensity.

You can use one or two dumbbells for this routine. Certain individuals may snatch much more weight than they can swing. In these instances, you can set up two side-by-side stations. The heavier dumbbell will be used for snatches. You will then sidestep to your second station and perform swings with the lighter dumbbell.

If there is no strength difference between snatches and swings, stick with one dumbbell. It will allow for a faster transition between movements. Whether using one or two dumbbells, choose the heaviest load that you can handle. The key to this workout's success is to move from one exercise to the next, as fast as possible. If you use two dumbbells, limit time between movements.

You will start by snatching the dumbbell five times with each hand. Start with your non-dominant hand (ex. left hand snatch x 5, then right hand snatch x 5). After completing the snatches, perform five dumbbell swings with each hand (no rest between movements). Quickly drop the dumbbell and perform 10 burpees. Focus on maximum height with each jump.

Recover quickly and continue with another pass through the circuit. After finishing five circuits, your heart will be beating like a drum.

Challenge yourself to reduce the time needed to complete the circuit. This routine will do wonders for work capacity and explosive endurance.

Ideas For Progression – To increase the intensity of this routine:

1. Perform a more difficult burpee variation (ex. 180-Degree Burpees).
2. Increase the weight of the dumbbell.
3. Perform 2-hand variations (ex. double snatch or double dumbbell swing).
4. Reduce rest between circuits, or eliminate rest.
5. Increase the total number of repetitions. For example, progress to the Magic 60, 70, 80, 90, or 100 (The Magic 100 = 100 reps per movement).

II. WORK CAPACITY 101

This routine consists of four movements. Each movement will be performed non-stop, with no rest between exercises. You will continue this workout for 20-minutes. Your goal is to perform the circuit 10 times in 20-minutes. You will begin a new circuit on every 2nd minute (ex. 2, 4, 6, 8, 10, 12, 14, 16, and 18 minutes). The circuit will average around 75 seconds (+/- 10 to 15 seconds). This will allow approximately 45 seconds of rest before starting the next cycle.

For example:

- Start the routine at time 0:00
- Circuit lasts 75 seconds (ending at 1:15)
- Rest 45 seconds (until 2:00)
- Begin second pass through circuit at 2:00

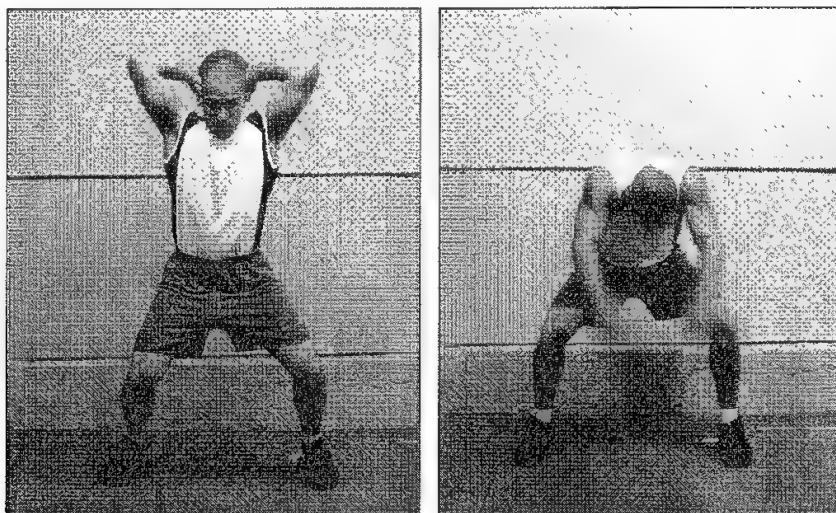
This cycle will continue for 20-minutes, or until you have completed 10 circuits.

The Exercises

- Pull-ups x 5
- Medicine Ball Slams x 10
- Burpees x 15
- Jumping Jacks x 20

Perform each movement as fast as possible. Move from one exercise to the next without stopping.

To perform **medicine ball slams**, you will start by holding the medicine ball behind the head. Slam the ball to the ground in front of you, as forcefully as possible. Immediately catch (or pick up) the ball and continue at a fast pace.



If this circuit is too difficult to begin on every second minute, you can alter the routine with one of two options. The first option is to increase rest between circuits. Simply perform as many circuits as possible within 20-minutes. Do the best that you can. The second option is to reduce the number of burpees from 15 to 10. Burpees are the most difficult part of the routine.

When performing the medicine ball slam, a non-bouncing medicine ball is recommended. You must slam the ball downward with a max-effort. If you use a bouncing medicine ball, be sure to move your head out of the way to avoid being smashed in the face by the rebounding ball.

If you do not need 45 seconds of rest before starting a second pass through the routine, go for it! Challenge yourself to perform more than 10 complete circuits within 20-minutes. As long as you move as fast as possible, you will benefit from the routine.

The circuit may not seem difficult after the first few cycles, but becomes more and more challenging as you approach the 20-minute mark.

Ideas For Progression – To increase the intensity of this routine:

1. Perform a more difficult pull-up variation (ex. towel pull-ups).
2. Increase the weight of the medicine ball.
3. Perform a more difficult burpee variation.
4. Reduce or eliminate rest between circuits.

III. DENSITY DAY

This workout consists of three density blocks.

The first block will last for ten minutes, consisting of the following:

- 2 Dumbbell Snatches per arm
- 6 Burpees

Repeat this sequence as many times as possible in ten minutes. You will start with two left hand snatches, followed by two right hand snatches, and finally 6 burpees.

The second block will last ten minutes, consisting of the following:

- Swing the sledgehammer as many times as possible. Alternate grip (ex. right hand on top, then left hand on top) every 5 repetitions.

The third block will last five minutes, consisting of the following:

- Hit the heavy bag for five minutes. Throw as many punches as possible. Focus on power punching.

Workout Notes

1. Limit rest between these three density blocks. If possible, perform the first two blocks at the same location. This will allow you to move from one exercise sequence to the next without wasting time. For example, perform snatches and burpees next to the sledgehammer. After completing the first ten-minute block, you can quickly grab the sledgehammer and continue with the second ten-minute block.
 - a. One outdoor alternative can be performed with 50 meter sprints, instead of burpees. Position a dumbbell at both ends of a 50 meter strip. Perform two snatches per arm, sprint 50 meters, and continue with two more snatches (per arm) at the opposite end of the 50 meter strip. Continue as many circuits as possible in ten-minutes.
2. Use a dumbbell that will challenge you throughout the workout. Go as heavy as possible, without inhibiting your ability to complete the entire ten-minute session. It will take a little experimentation to determine your ideal load.

3. Use the five-minute heavy bag session as a finisher. Quickly wrap your hands and wear proper training gloves when hitting the bag. Punish the bag as if it stole something from you.

Ideas For Progression – To increase the intensity of this routine:

1. Add more weight when performing the dumbbell snatch.
2. Perform a more difficult snatch variation. For example, rather than performing two snatches per arm, you could perform a two-dumbbell split snatch for two repetitions.
3. Perform a more difficult burpee variation.
4. Use a heavier sledgehammer.
5. Focus on power boxing during the five minute round. Use techniques such as punch-out drills and the 10 x 10 System.

IV. SWEET 16

As mentioned on page 131, Sweet 16 consists of four Tabata sequences, each performed for a full (8 x 20w/10r) interval.

1. Tabata Heavy Bag Punches
2. Tabata Squats
3. Tabata Heavy Bag Punches
4. Tabata Pushups

Perform one exercise after the other. You will start a new exercise on every fourth minute. Rest between exercises is only 10 seconds.

- Tabata Heavy Bag Punches start at 0:00
- Tabata Squats start at 4:00
- Tabata Heavy Bag Punches (Part II) starts at 8:00
- Tabata Pushups start at 12:00

Start this workout with your hands gloved. You will wear gloves during the first three Tabata exercises (Heavy Bag, Squats, Heavy Bag). You can then quickly remove the gloves during the 10 second transition between the final heavy bag interval and the first pushup interval.

Each exercise must be performed as fast as possible for maximum benefits.

Ideas For Progression – To increase the intensity of this routine:

1. Work faster! Perform each exercise as fast as possible.
2. Replace Tabata Pushups with Tabata Burpees.

V. FAST AND FURIOUS

The following routine consists of four movements. Each movement will be performed non-stop, with no rest between exercises. You will continue this workout for 20-minutes. Your goal is to perform as many circuits as possible during the 20-minute block. There is no rest between exercises, and you will determine rest periods between circuits.

- 10 Pull-ups
- 10 Dumbbell Swings per arm
- 10 Plyometric Pushups
- 10 Knee Tucks

Perform each movement as fast as possible. Move from one exercise to the next without stopping.

This workout blends strength and conditioning work with explosive bodyweight exercise. After building fatigue from pull-ups and dumbbell swings, you must explode with plyometric pushups and knee tucks. As a fighter, you must train the body to explode through fatigue.

Fatigue has a negative effect on skill. All fighters must learn to perform in the fatigued state.

Ideas For Progression – To increase the intensity of this routine:

1. Perform a more challenging pull-up variation (ex. towel pull-ups).
2. Increase the weight of the dumbbell.
3. Limit rest between circuits. For example, perform two or three circuits (non-stop) before stopping for a quick breather.

VI. THE TARZAN CHALLENGE

This routine can be used as a wildcard in place of a previous challenge. This is an outdoor workout, which is both fun and challenging.

You will perform four exercises as a circuit, completing as many circuits as possible in 20-minutes.

The Exercises:

- Rope Climb x 5 climbs
- Muscle-ups x 5
- One-legged Squats x 5 (per leg)
- Lunge Jumps x 10 (5 per leg)

This workout will require a climbing rope and a pair of rings. You will start by climbing the rope 5 times. You will then mount the rings and perform 5 muscle-ups. Next, you will hit the lower body with 5 one-legged squats per leg, and finally 10 lunge jumps. There is no rest between exercises.

Repeat this circuit as many times as possible in 20-minutes.



These challenges will be cycled throughout the 50 day program included within this manual. While testing this program with several participants, I found that the Warrior Challenge days were the most dreaded, yet most valuable. It was common for one of the athletes to make excuses for skipping these workouts, or try to postpone the challenge for another day.

It is useful to perform workouts that generate such feelings. Once you commit to the program, you will not allow yourself to skip a workout. By tackling what appears to be the impossible, you will realize that nothing is impossible. You will not fear the onset of fatigue.

Many fighters live in fear of fatigue. They dread running out of gas, which ultimately ruins their confidence. The worst thing that a combat athlete can do is question his conditioning on fight night. The dressing room is already a lonely place. You do not want to be battling thoughts such as, "I wish I had one more week to train" or "I wish I had done more running" or "I wish I had more sparring."

Gain confidence in your training. Stare fatigue in the eyes and learn to work through its presence. Enter the dressing room on fight night with confidence. Challenge yourself in the gym. Compete against yourself and others when performing these challenges. Do the best that you can, and strive to improve.

As mentioned before (*but worth repeating*), fights are won in the gym!

WHAT ABOUT FAT LOSS?

Thus far, this chapter has focused on high intensity conditioning routines. These routines are rather brief when compared to a traditional distance running session. You may be accustomed to running 4 or 5 miles for a conditioning workout. It has long been thought that these extended, low intensity sessions were optimal for fat loss.

After all, aerobic exercise is required for fat loss, right?

Wrong!

This misconception originated when scientists learned that fat was not a primary energy source for high intensity work. As intensity increases, the role of fat as an energy source decreases. Carbohydrates become instrumental in fueling these more intense activities.

Armed with this knowledge, one may be quick to assume that fat is not burned during shorter, more intense workouts. After all, if it is not used to fuel the activity, how can it be burned during such a workout?

This question is easily answered when one examines the after effects of the intense training session. Although one may burn fat during an extended aerobic session, fat loss ceases when the exercise session ends. More intense exercise is much different.

There is a significantly higher post exercise energy expenditure following intense exercise sessions. The degree to which this after effect takes place depends on exercise intensity, not duration. Intense training sessions contribute significantly to total daily calorie burning.

These statements have been proven over and over again in scientific laboratories. One notable study (Tremblay et al, 1994) compared the effects of endurance training and high intensity intermittent training. Two separate training groups were evaluated. One group maintained an endurance training program for 20 weeks. The other group trained with high intensity intermittent training (HIIT) for 15 weeks. The results of the study showed that the HIIT group lost significantly more body fat. Oddly enough, the endurance training group experienced a greater caloric expenditure per workout (during the workout). Based on the fact that the endurance group burned more calories per session, yet lost less body fat, it becomes clear that the contributing factors for fat loss occur **after** the training session. The after effect of more intense work makes this style of training the ultimate fat loss protocol.

FINAL WORDS

In summary, high intensity conditioning drills offer numerous benefits to combat athletes. Besides training those energy systems specific to competition, this style of training will also improve body composition, while preserving strength and power output. Longer aerobic sessions are not specific to combat, reduce power, require more time, and are not as effective at improving body composition.

Say good-bye to slow paced running. It should not constitute a primary means of conditioning.

Train fast to fight fast.

AN INDOMITABLE CORE

"Effort only fully releases its reward after a person refuses to quit." - Napoleon Hill

Notice how this chapter is titled An Indomitable Core and not Indomitable Abs. Not a big difference, right?

Wrong!

Core training involves much more than sucking in your tummy for the beach. Contrary to popular belief, endless repetitions of crunches and sit-ups do not constitute a complete core training routine.

I cannot count how many times I have heard an athlete close a training session with the line below:

"I'm going to finish with some ab work."

The athlete then drops to the ground, cranks out some crunches, feels a nice burn in the abs, and calls it a day.

Unfortunately, much of the athlete's core is neglected. For example, the lower back is overlooked. Consequently, the athlete develops strength and posture imbalances. Not only does performance suffer, but the risk of injury increases.

Few fighters train the entire core. Many old school coaches do not understand the anatomy of the core, therefore disregard its importance.

Others have caught wind of the recent fitness buzz about core training and have simply written it off as another useless fad.

Wrong again.

Although the core training craze has gotten a bit out of control, it is not because this style of training is ineffective. On the contrary, core training is one of the most important aspects of athletic preparation. Unfortunately, there will always be those money hungry trainers and guru-wannabes who attempt to exploit the latest fitness trend. Core training happens to be the latest victim. Consequently,

we are bombarded with advertisements for new products, services, and training programs, all dedicated to the core.

Oddly enough, core training is not a new discovery. In the 1920's, Joseph Pilates spoke of developing a girdle of strength by recruiting the deep muscles of the trunk. Pilates believed that by working the deepest layer of abdominal muscles, one would support the spine and stabilize the pelvis, leading to improved posture, stability, and balance.

THE ALMIGHTY CORE

The core is the body's center of mass. It is the invaluable link between the upper and lower body. In addition to providing stability, the core allows one to develop and transfer force from the legs to the upper body, and vice versa.

Consider a boxer who initiates a left hook towards his opponent. The punch starts at the ground. Power then transfers and further develops through the core. Core strength is essential for punching power. Without this valuable transfer agent, power is limited.

The same logic applies to kicking. Rotational strength is imperative for both upper and lower body attacks.

Furthermore, grapplers and wrestlers need tremendous torso strength to effectively maneuver on the ground, defend, and launch offensive attacks.

In short, all fighters need core strength. I highly recommend dedicated core routines. These workouts do not need to be lengthy. You can make significant strides forward with a few brief core workouts each week.

Obvious benefits of core training include:

- Injury prevention
- Improved power in all athletic motions
- Greater stability in movement

To summarize, the core provides stability and protection, develops and transfers force, and coordinates muscle actions (among other things).

This partial list of benefits should be all the reason that you need to train this vital area.

WHAT IS THE CORE?

Without turning this into a dull, mind numbing science class, let's begin with a simplified overview of the core's anatomy. By understanding the anatomy of the core, you will soon realize that movements such as the abdominal crunch are limited. Core strength is not measured by an aesthetic set of six-pack abs. I've seen many posers walk into the boxing gym. After a few rounds of sparring, they have a face to face with the canvas floor, courtesy of a well placed left hook to the midsection.

There is nothing wrong with striving to achieve an attractive physique. If you feel good about yourself, you are more likely to continue training. With that said, do not lose sight of more important objectives, namely improvements in athletic performance. This program will give you the six-pack abs that you want, but also much more.

The abdominal wall consists of four paired flat muscles. These muscles are instrumental in promoting movement of the vertebral column.

When discussing the core's anatomy, the abdominals are a logical starting point. The abdominal muscles are thin, yet run in different directions, which increases their strength. The rectus abdominis is the most well-known abdominal muscle. This superficial muscle pair forms the "six-pack" that so many desire.

The rectus abdominis extends from the pubis to the rib cage. The primary functions of the rectus abdominis include trunk flexion, stabilizing the pelvis, and increasing intra-abdominal pressure (Marieb, 2001).

The external oblique muscles are the outermost muscles of the abdomen, found on each side of the rectus abdominis. The external oblique muscles attach to the eight lower ribs, running inferomedially and at right angles to the underlying internal oblique muscles (forming an "X"). Together, the internal and external oblique muscles are involved in flexing the vertebral column, lateral flexion, and trunk rotation.

Due to muscle fiber arrangements, the external oblique and internal oblique muscles have unique properties. For example, when twisting the trunk in one direction, the opposite side external oblique muscles are involved. Suppose you were twisting the trunk to the left, the external oblique muscles from your right side would facilitate the movement.

Alternatively, the internal oblique muscles act on the same side of the movement. For example, if you rotate to the right, the right side internal oblique muscles will facilitate the movement. These powerful trunk rotators work on the same side, while the external oblique muscles work on the opposite side.

Next, the transverse abdominis, which runs horizontally, is the deepest muscle of the abdomen. Many athletes are unaware that this muscle even exists. The transverse abdominis connects to the lower ribs and lumbar vertebrae, and wraps around to the pubic crest and linea alba. This deep core muscle has been described as the body's internal corset or natural weight belt that wraps around the spine. Chief functions of the transverse abdominis include increasing trunk stability, tightening the abdominal wall, and aiding with forward bending.

In fact, science has confirmed the importance of the transverse abdominis. The transverse abdominis and multifidus are instrumental in stabilizing the lumbar spine. A well-known study by Hodges and Richardson (1996) found that the co-contraction of the transverse abdominis and multifidus occur before any movement of the limbs. This study illustrated the significance of the transverse abdominis and multifidus in stabilizing the spine. These muscles anticipate dynamic forces to the lumbar spine, and consequently stabilize the area prior to movement.

The muscles of the back are arranged in three layers. The multifidus is one of the more deeply situated muscles, starting in the lower back, running the entire length of the spine, up to the neck. Please note however that the multifidus is not one long muscle that runs from top to bottom. On the contrary, several multifidus muscles run up the spine, each crossing two to five levels of vertebrae, to cover the entire spinal column (Johnson, 2002). In addition to stability, these muscles aid in rotation, extension, and side bending movements.

Unfortunately, it is common to neglect the muscles of the low back. One cannot see the low back when looking in the mirror. This area is often untrained and weak. Do not make this mistake.

Failure to train the muscles of the low back will not only hinder athletic performance, but also leave one prone to injury. It has been estimated that 80% of the population will suffer from low back pain at some point in their lives. Let's do our part to stay off this list. It is about time that society became proactive, rather than waiting for an injury to occur before training this muscle group.

Moving right along, let's continue by discussing the erector spinae, the prime mover of back extension. These muscles also aid in lateral flexion and rotation. As mentioned, the back muscles are arranged in layers. The most superficial layer is comprised of these large erector spinae muscles. The erector spinae muscles attach to the iliac and sacral crests inferiorly and to the spinous processes throughout the spine. The erector spinae is a single muscle in the lower lumbar region, which divides into three columns. The three columns include the iliocostalis, longissimus, and spinalis muscles (Marieb, 2001).

The lumbar spine also includes large lateral and anterior muscles such as the quadratus lumborum, psoas, and iliacus muscles which attach to the anterior vertebral bodies and transverse processes. The quadratus lumborum is a fleshy muscle that forms part of the posterior abdominal wall. This muscle laterally flexes and extends the vertebral column, in addition to aiding with forced inspiration and the maintenance of upright posture.

The iliopsoas is a composite of two related muscles, the iliacus and psoas major. The iliacus is a large fan shaped lateral muscle. It lies along the lateral side of the psoas major. The psoas major is a longer, thicker, more medial muscle, passing from the abdomen to the thigh, deep to the inguinal ligament. This strong composite muscle produces hip flexion. It also is constantly active in the maintenance of erect posture, preventing hyperextension of the hip joint while standing (Marieb, 2001).

MORE THAN CRUNCHES

Thus far, we have identified the rectus abdominis, the internal and external oblique muscles, the transverse abdominis, the multifidus, the erector spinae muscles, the quadratus lumborum, and the iliopsoas. Additional muscles will also be trained when performing the core exercises from this chapter. For example, many exercises will work the rectus femoris, gluteus maximus, and hamstring muscles. In fact, many trainers consider these muscles to be part of the *core*.

Rather than arguing over which muscles should form the official core list, I believe it is more useful to focus on training the body as a functional unit. I will not nitpick over which muscles are official members of the core, and which are not. More importantly, we must think of the body as one integrated unit. Each piece of the puzzle plays an integral role. I view my body as one unit, not a pile of independent muscles. The body is the ultimate team player. The muscles work in tandem to facilitate movement.

While it is not necessary to become an anatomy expert, it is important that you recognize the significance of the core. As you can see, the core consists of much more than the superficial six-pack that so many desire. Many athletes fail to train the deep muscles of the core. Imbalances develop which leave the athlete less capable.

Our core training routine will include a vast array of movements. It is not enough to train the core while lying on the floor (a common mistake made by the crunch junkies). One must understand the movements of the core, and then design a routine that incorporates these particular movements.

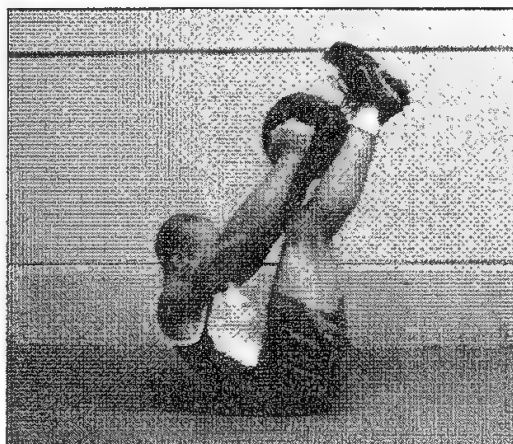
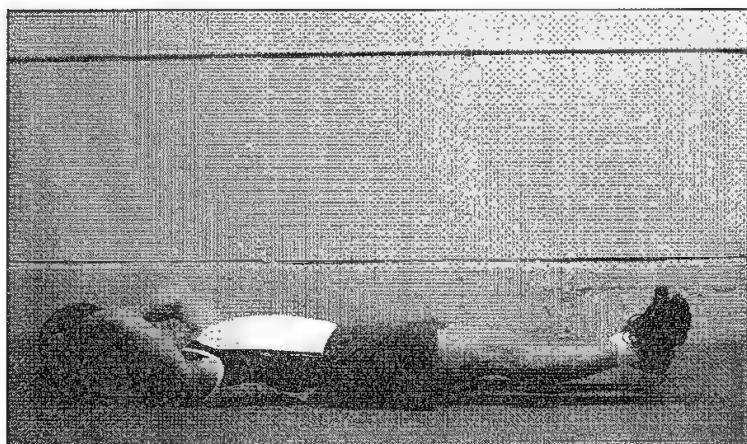
The limitations of the crunch become obvious after learning the movements and functions of the core. The primary movements of the core include extension, flexion, lateral flexion, rotation, and stabilization. Performing endless crunches does not address each movement. To add to the problem, the crunch fails to address the three planes of motion.

To summarize, say good-bye to endless nights of high repetition crunches. It is time to tap into a goldmine of strength and power. Core training is not a fad. The importance of the core is legitimate. You do not need any fancy machines to develop a powerful core. All that you need is a regular dose of hard work.

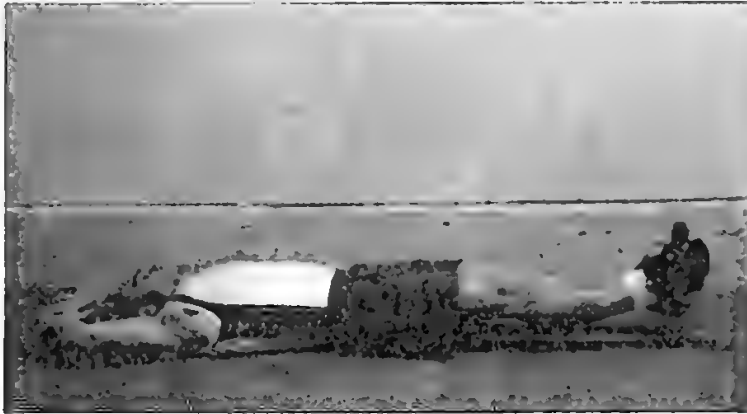
Let's now review some specific movements.

CORE EXERCISES

The **V-up** begins from a supine position (lying face up) with the arms extended. Contract the abdominals, as you thrust the legs and arms together. Your body will come together like the letter "V". Do not allow the feet to touch the ground between repetitions. You can hold a weight or medicine ball to increase the intensity.



The knee hug also begins from a supine position with the arms extended. Thrust the upper and lower body together until you "hug" your knees. Do not allow your feet to touch the ground between repetitions to maintain tension on the abs.



To perform **chinnies**, you will bring the left elbow to the right knee, then the right elbow to the left knee. You will continue back and forth in this manner, keeping a furious pace throughout. The faster you move, the more you will feel this exercise. It is important that your legs do not touch the ground until the set is complete. The rectus abdominis will remain tense.



The **Plank** is an excellent static hold for the core. Start in a pushup position, and then drop your elbows to the ground. Only your forearms and toes should touch the ground. Keep your back straight and hold this position for time. Advanced athletes should be able to hold this position for several minutes.

The **extended arm pushup** is a step up from the traditional plank. For this movement, you will begin lying face down, with the arms extended. You will then press upward, with outstretched arms. Hold the upright position for several seconds, before lowering yourself back to the ground. Continue for several repetitions, each lasting 5 to 10 seconds. This exercise will strengthen the entire body, with particular attention to the core.



For an even greater challenge, you can replicate this movement with **one arm** at a time. You will press the body up with one arm, then hold the upright position for several seconds, before returning to the ground. You will then press up with the opposite hand. This is an advanced exercise that will require a good deal of core strength. I highly recommend both the single and double arm variations.



You can also perform a variation where you switch back and forth between your left and right arm, without coming down between repetitions. For example, you would hold yourself upright with the left hand for 5 seconds, then shuffle to the right hand (without coming back down to the ground). The core will remain tense as you hold yourself upright.

The extended arm pushup exercises will help prepare you for the next movement. This exercise will require the use of an inexpensive abdominal wheel. You can buy one of these wheels for less than \$10 at almost any sporting good store.

The **standing wheel rollout** is an excellent demonstration of core strength. This exercise is a personal favorite.

The instructions are simple. You will bend over at the waist, and then roll the wheel out until the arms are extended. From this position, you will reverse the movement, returning to the standing position. Your body does not touch the ground. Only your feet and the wheel will touch the ground.



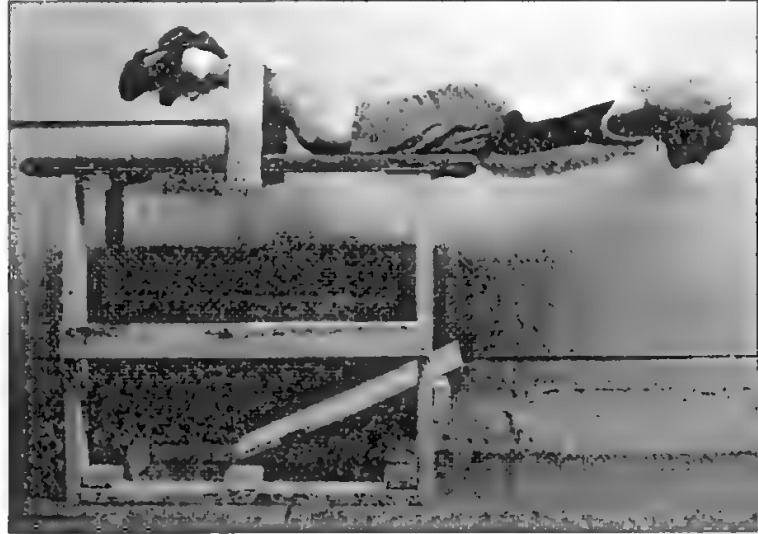
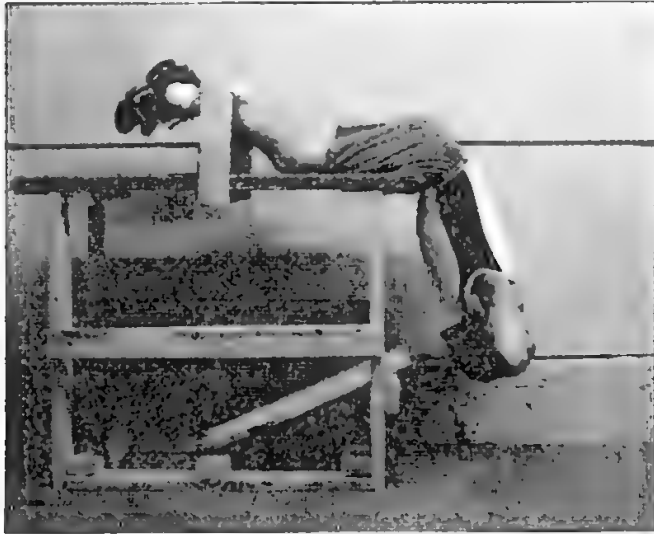
Many athletes will struggle with this movement. If your core lacks strength, you will feel undue pressure on the low back. For this reason, you must exercise caution when attempting this movement. In most cases, it will be necessary to begin training the rollout from the knees. As you adapt to the kneeling rollout, you can begin training specifically for the standing variation.

One way to develop the strength for this movement is by starting with partial rollouts. You can use a wall to reduce the range of motion required, therefore reducing the intensity of the exercise. Depending on your height, you can start 4 to 5 feet from a wall.

Roll the wheel from the standing position until you make contact with the wall (the wheel will hit the wall). From this position, you will reverse the motion, back to the starting position. Work several sets of 2 or 3 reps to build strength in this movement. In time, you can gradually inch yourself away from the wall. Within a few months of dedicated practice, you will no longer need the wall for assistance.

One reason for failure with the standing wheel rollout is inadequate lower back strength. Fortunately, you can use the **back extension** to strengthen the low back. I use this movement regularly, performed on the homemade bench illustrated below. You could also perform this movement from a stability ball.

You will begin by bending at the waist, bringing your head towards the ground. Upon reaching the bottom position, you will raise the body upward, until the upper body is parallel with the legs. You can eventually add weight to this movement by holding a plate across the chest.



If you do not have access to a back extension machine or stability ball, you can perform a **bodyweight superman** instead. This movement will strengthen the lower back, without the need for equipment.

Begin lying face down, with arms and legs fully extended. Lift the arms and legs from the ground, pausing at the upright position. Your body will resemble *Superman* flying through the air.



The next exercise rivals the standing wheel rollout in difficulty. It is extremely advanced, not designed for beginners. This movement has several names, depending on whom you ask. It has been called the flag, the dragon flag, the lying pike, and the drawbridge (just to name a few). Obviously, the name does not matter. What matters is whether you can perform this movement. Let's call this exercise the **flag**.

This exercise was one of many that Bruce Lee used to develop his incredible abdominal wall. As stated by Lee, *"My strength comes from the abdomen. It's the center of gravity and the source of real power."*

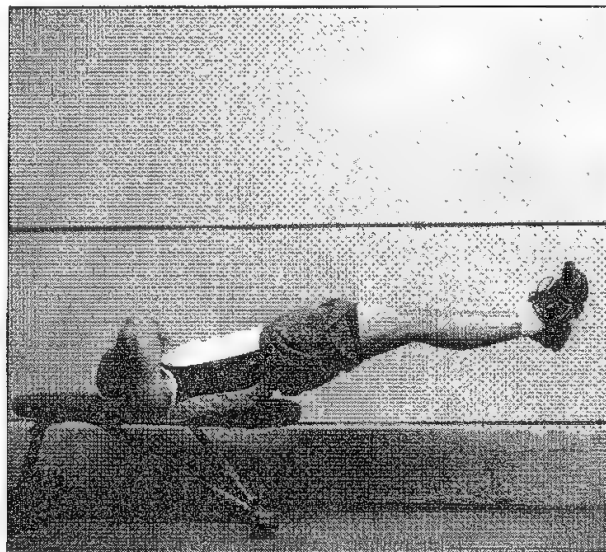
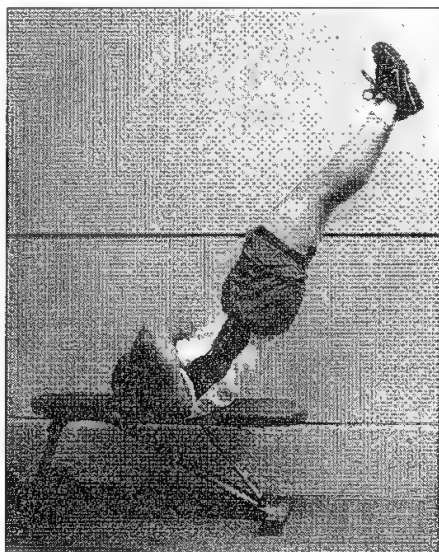
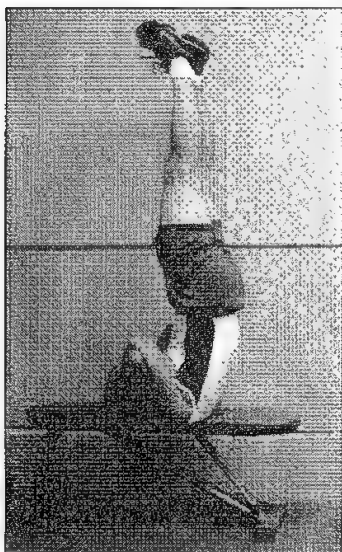
This exercise will be performed on a bench. You will need to grip the bench firmly behind your head. Next, raise the legs upward into the air. Your feet will point towards the sky. Your weight will rest on the shoulder blades.

From this position, you will lower the body towards the ground. Descend slowly as the body remains straight. Focus on staying tight, keeping the body tense and controlled. This is a slow movement, not a fast fall.

As your body approaches a parallel position with the floor, you will need to squeeze the hands tightly into the bench to maintain control. Upon reaching this position, you will reverse the movement, retracing your steps, following the exact path. Concentrate on keeping the body straight and extended.

Proceed with caution when first attempting this exercise.

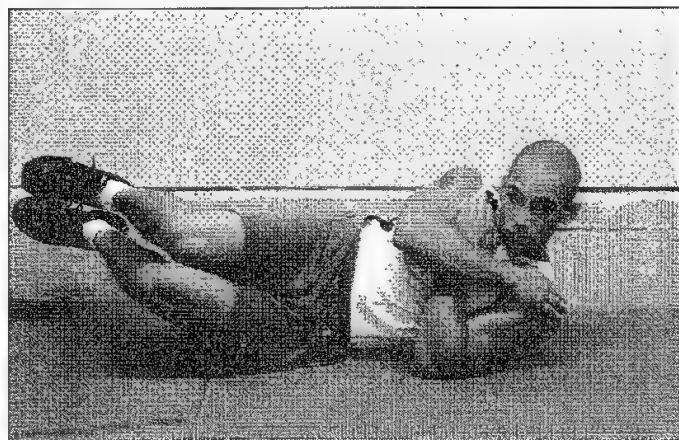
More advanced athletes can perform this exercise while wearing light ankle weights, or by holding a medicine ball between the feet. These variations are extremely advanced, only recommended for highly trained athletes.



Thus far, our discussion has been limited to movements that lack lateral and rotational components. Let's now expand our repertoire, beginning with some bodyweight options.

The **side crunch** will target the oblique musculature. This movement must be slow and controlled. This is not a momentum exercise. Rather, you will contract slowly, pausing at the top, as you *squeeze* the upper and lower body together.

For this exercise, you must train both the left and right side evenly.



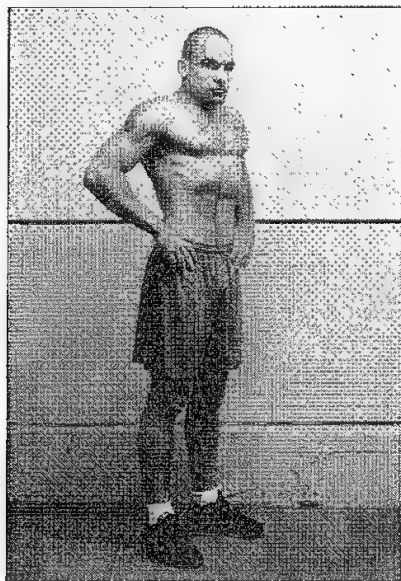
CLEARING THE AIR

Thus far, this chapter has pointed out limitations of those core programs centered around movements such as the crunch. At this point, you may be wondering why I have included the side crunch. It may seem a bit ironic, when considering the introduction to this chapter.

Abdominal crunches are far from a *bad exercise*. While crunches are limited, focusing primarily on the rectus abdominis, it does not mean the movement is worthless. Rather, the message I wish to convey is that far too many people focus far **too much attention** to this one exercise.

The side crunch will not form your entire core program. It can however serve as a valuable addition. Even a traditional crunch could be added to your core routine. For example, you could perform crunches from a stability ball as an effective way to train the rectus abdominis. Focus on crunching slowly, tensing hard, and pausing at the top. You can add weight for a greater challenge.

In my opinion, exercises such as crunches can be useful for lighter maintenance days. For example, one week could include three intense core sessions, with another two days dedicated to lighter movements (ex. crunches, side crunches, back extensions, vacuums, etc.).



A **vacuum** involves an isometric contraction, as no movement takes place. This exercise will strengthen the transverse abdominis. This exercise is also useful to reduce one's waistline.

To perform a vacuum, you will start by exhaling the air from your lungs. Expand the chest, and draw your stomach inward as much as possible. It is useful to imagine your navel touching the spine. Begin with several 10 second holds, and gradually work your way up to 60 seconds or more.

This movement can be trained regularly, or as an ideal addition to a lighter maintenance day.



I grew up training at an old school boxing gym. The gym was low on equipment but high on talent. Top ranked fighters were commonplace. Almost every fighter would train the abdomen daily. We were always required to finish with our exercises, a mix of calisthenics and abdominal work. Daily abdominal training was a way of life. It seemed logical, as I had grown up reading how Bruce Lee also trained his abdomen daily.

Years later, the consensus about abdominal training has changed. Now, it is common to see trainers recommending only 2 or 3 core sessions per week. The difference in opinions leads to an obvious question. Who is correct, the old school trainers or the new school trainers?

In my opinion, both schools are wrong.

First, how can anyone with abdominals less impressive than Bruce Lee state that his training techniques were incorrect? Doesn't that seem a bit irrational? It would be like having a fat man tell a skinny man how to lose weight.

Scientists are quick to make grandiose statements about experiments conducted on lab rats. Oddly enough, these same scientists fail to look at real world examples from athletes such as Bruce Lee.

Who cares what happened to a rat? Doesn't it make more sense to focus on human beings? Doesn't it make even more sense to focus on highly trained human beings?

I am all for science, but we cannot become slaves to each scientific study. Many of the greatest fighters of all time trained their abs on a daily basis. What gives a scientist or modern trainer the right to criticize a former world champion? Many of these "new school" trainers have never felt a solid left hook to the liver. How can they sit perched behind their desks and explain how a fighter should prepare to absorb punches to the midsection? How can they criticize the hundreds and thousands of fighters who have come before them and succeeded with such a system? Should we believe a lab rat over countless past and present world champions?

"So Ross, are you suggesting daily abdominal training?"

Not necessarily!

There are very few *rules* regarding the training of elite athletes. Rules are meant to be broken. The body is capable of much more than any man or woman can understand.

The body can adapt to almost any stimulus. Clearly, an untrained athlete is not prepared for a vigorous core training program. Many individuals can succeed with 2 or 3 sessions per week.

In time, the body can be acclimated to more rigorous and more frequent training. I am not suggesting that you perform the most advanced core exercises on a daily basis. You can however fill in the gaps with some less intense sessions, spaced between those more strenuous workouts.

Once again, this system is not for everyone. I am addressing those fighters with the need for more frequent core work.

Personally, I average five core sessions per week. Three of these days are more intense, with two days dedicated to lighter movements. Surely, there will be critics to this system. Criticism is a part of this world.

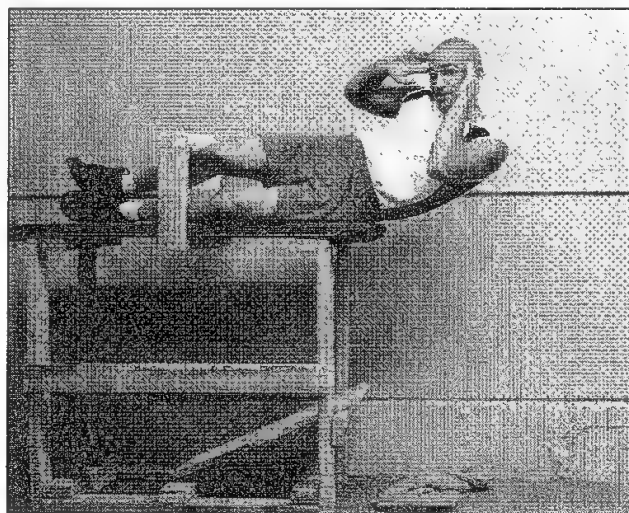
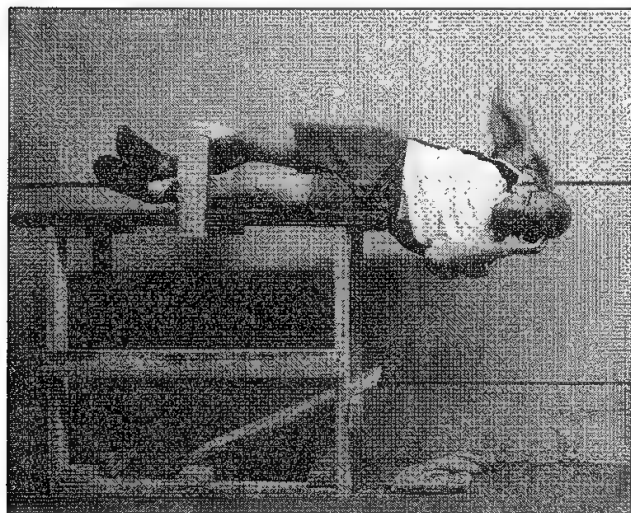
I am always open to a debate. I welcome those who criticize my routine to train with me during a typical core workout. I commonly perform standing wheel rollouts while wearing a 50 pound weighted vest. Am I patting myself on the back? Hell no! I'm just making a point. More frequent core workouts have not interfered with my development as an athlete. I have never gone down from a body shot, and I've been inside the ring with former world champions.

Before I close this rant, I would like to share a few core training tidbits:

- Progression takes time. Don't rush into the most advanced exercises without building a solid foundation.
- Limit more intense core work to approximately 3 sessions per week. The 50 day program contained within this guide includes two *intense* core workouts for every 4 days of training.
- If you seek more, you can add another 1 or 2 maintenance sessions. Lighter days should include bodyweight exercises, with no added resistance.
- The body is capable of much more than you will ever imagine.

BACK TO THE EXERCISES

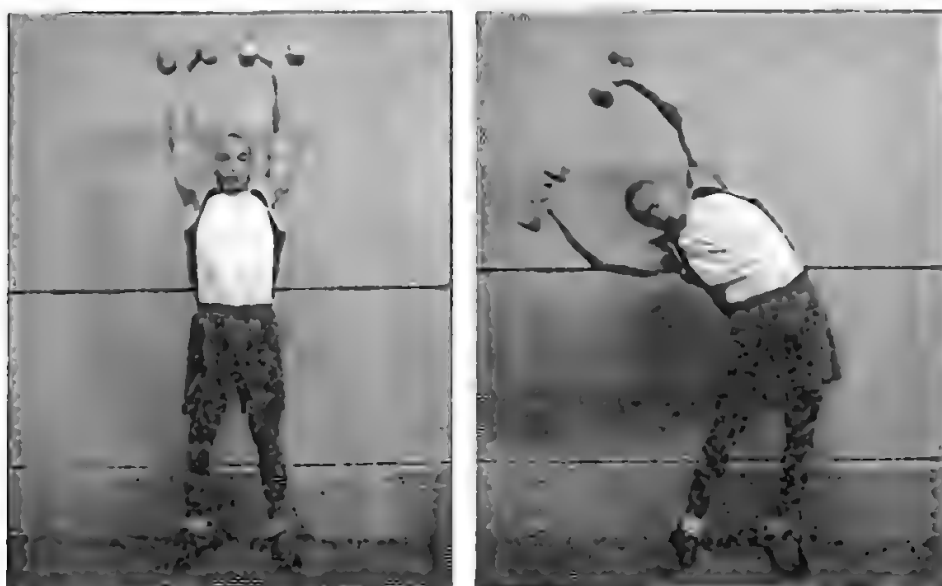
A **side crunch** can also be performed from a back extension machine. This variation does not involve the upward crunching motion with the legs. The legs remain stationary, as you can achieve a greater range of motion with the upper body. The upper body dips below the bench, then crunches up and pauses at the top. This movement offers another useful way to target the oblique muscles.

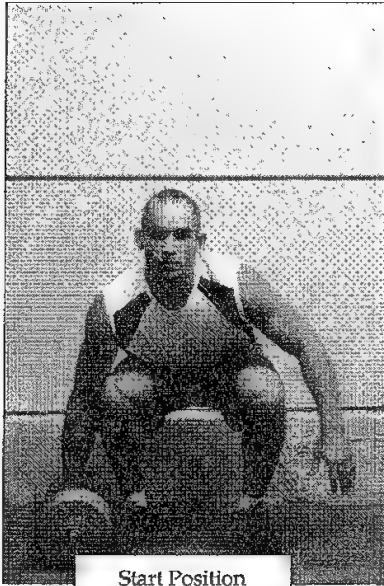


Perhaps the best exercise for the oblique muscles is the **side bend**. With a heavy dumbbell in hand, you will bend slowly from side to side without bending forward or backward. Work both sides evenly.

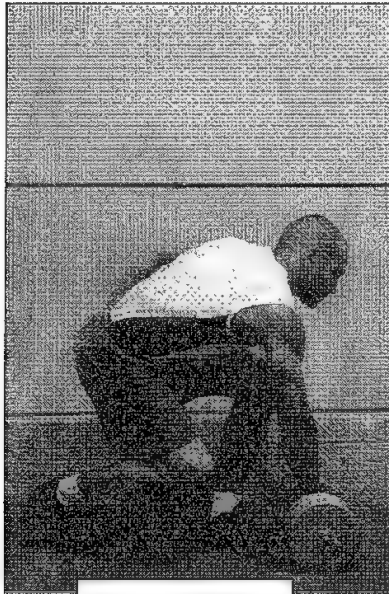
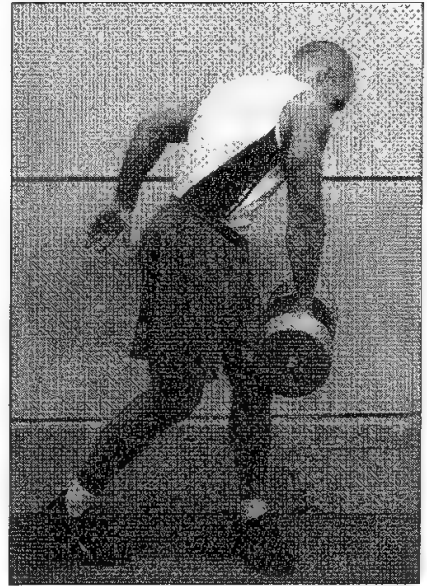
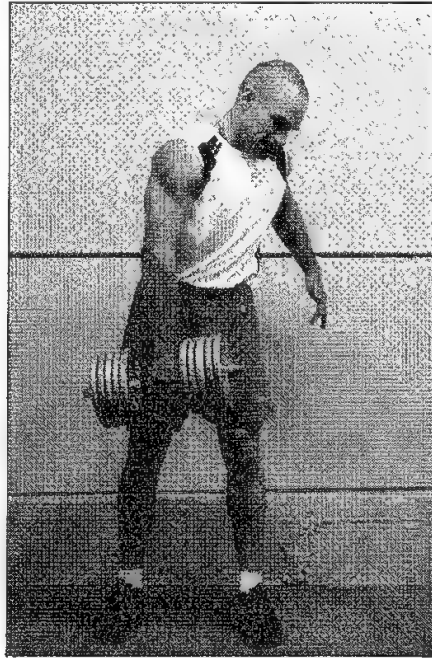


Another useful *side bending* exercise is the **Saxon Side Bend**, named after former strongman Arthur Saxon. You will begin with the feet slightly wider than shoulder width apart. The arms will be extended overhead with light dumbbells in hand. Next, you will laterally flex to one side. The weights will remain close to each other, with the arms extended long. The bending motion must take place at the waist, not the shoulders and arms. Work both sides evenly with this deceptively difficult exercise.





Start Position



End Position

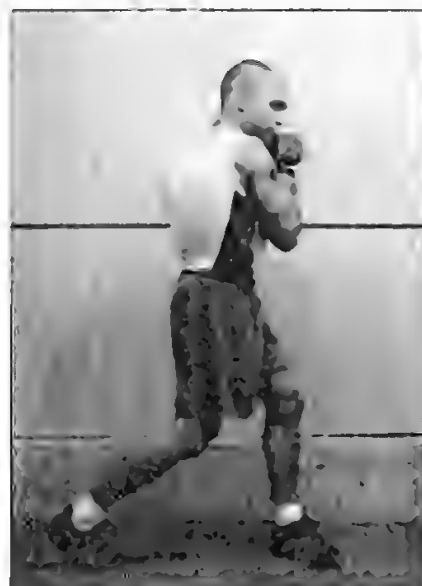
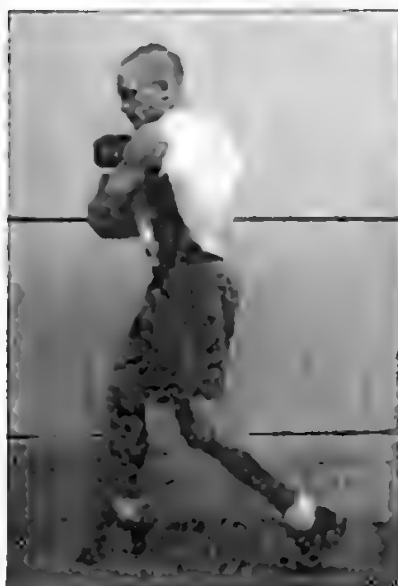
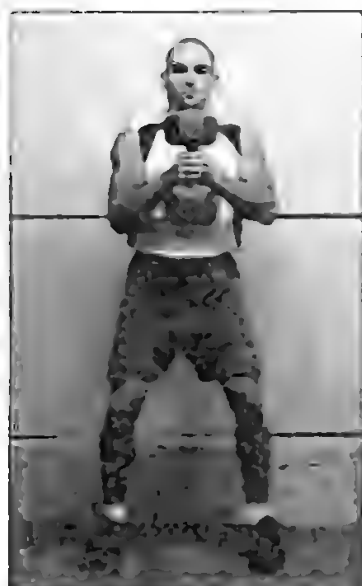
The **deadlift twist** adds to the side bend. You will need to lift a heavy dumbbell from the floor, and then rotate the weight to your opposite side, returning it to the ground. You will begin with the feet shoulder width apart. Next, you will squat down with the back flat, lifting the dumbbell with one hand. Stand up while twisting to the opposite side (ex. from right to left).

The dumbbell will travel throughout an arc until it reaches your opposite side.

Finally, you will lower the dumbbell to the floor, outside your foot. Grasp the dumbbell with the other hand and repeat the motion back to the other side.

Work both sides evenly (ex. 5 reps per side). This movement is one of the best core developers available. You will develop strength throughout the body when training this movement with a heavy dumbbell.

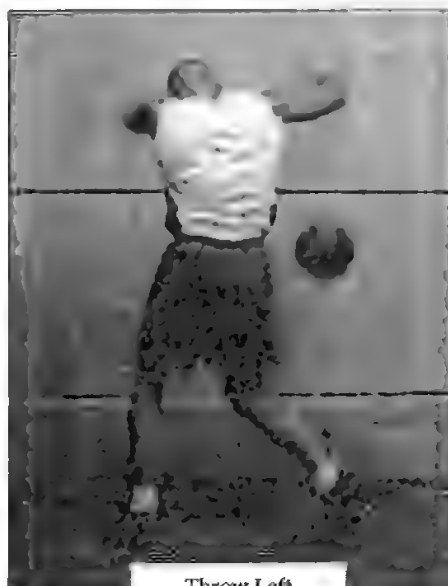
Dumbbells can also be used to train rotational strength. The **dumbbell twist** begins with a dumbbell held in front of the midsection. From this position, you will twist to each side, pivoting off the back foot (left foot when twisting right)



A medicine ball is another excellent choice when training for rotational power. The **twist throw** is an excellent addition to any core routine.



Twist Right



Throw Left



Catch and Continue

You will begin by facing a cement wall (or any rebounding surface). Next, rotate to one side (ex. right), as you pivot on the balls of the feet. Explode back to the center (to the left) as you propel the ball against the wall. You will then catch the ball as it rebounds from the wall. Upon catching the ball, you will repeat the motion in the opposite direction (pivot left).

You will quickly develop a rhythm with this exercise, as you time each rebound from the wall. Catch the ball, and continue at a brisk pace.

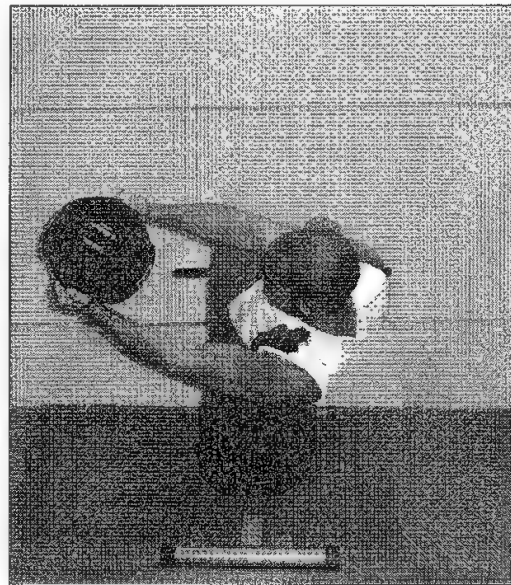
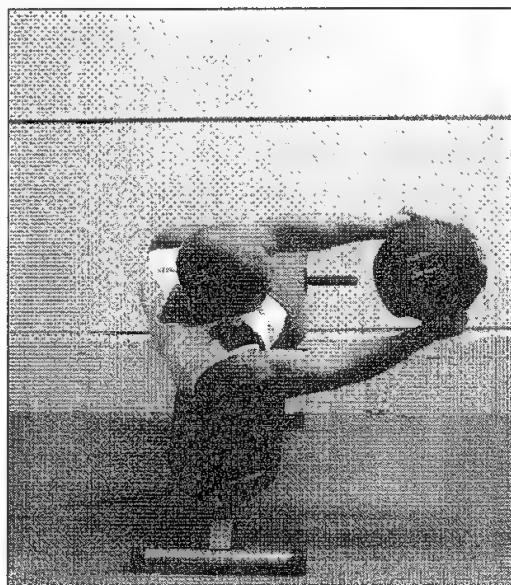
Apply maximum force to each medicine ball throw. One of the true benefits of medicine ball training is the ability to explode with power, with no need for deceleration. There is no need to stop or control a weight. You can launch the medicine ball with maximal power.



The next movement is a personal favorite of mine. The **Russian twist** will develop tremendous rotational power. To maximize the effectiveness of this exercise, I recommend training this movement from an incline position. In the illustrations below, I have demonstrated this exercise from a slant board.

To perform this movement, you will twist from side to side with the arms extended, holding a medicine ball or weight. The core will remain tense throughout the set, as you maintain a semi-crunch position. Notice in the start position how my back is elevated from the bench. I do not lie flat against the bench. Rather, I initiate the movement with the core activated.

When twisting from side to side, keep your eyes focused on the weight.

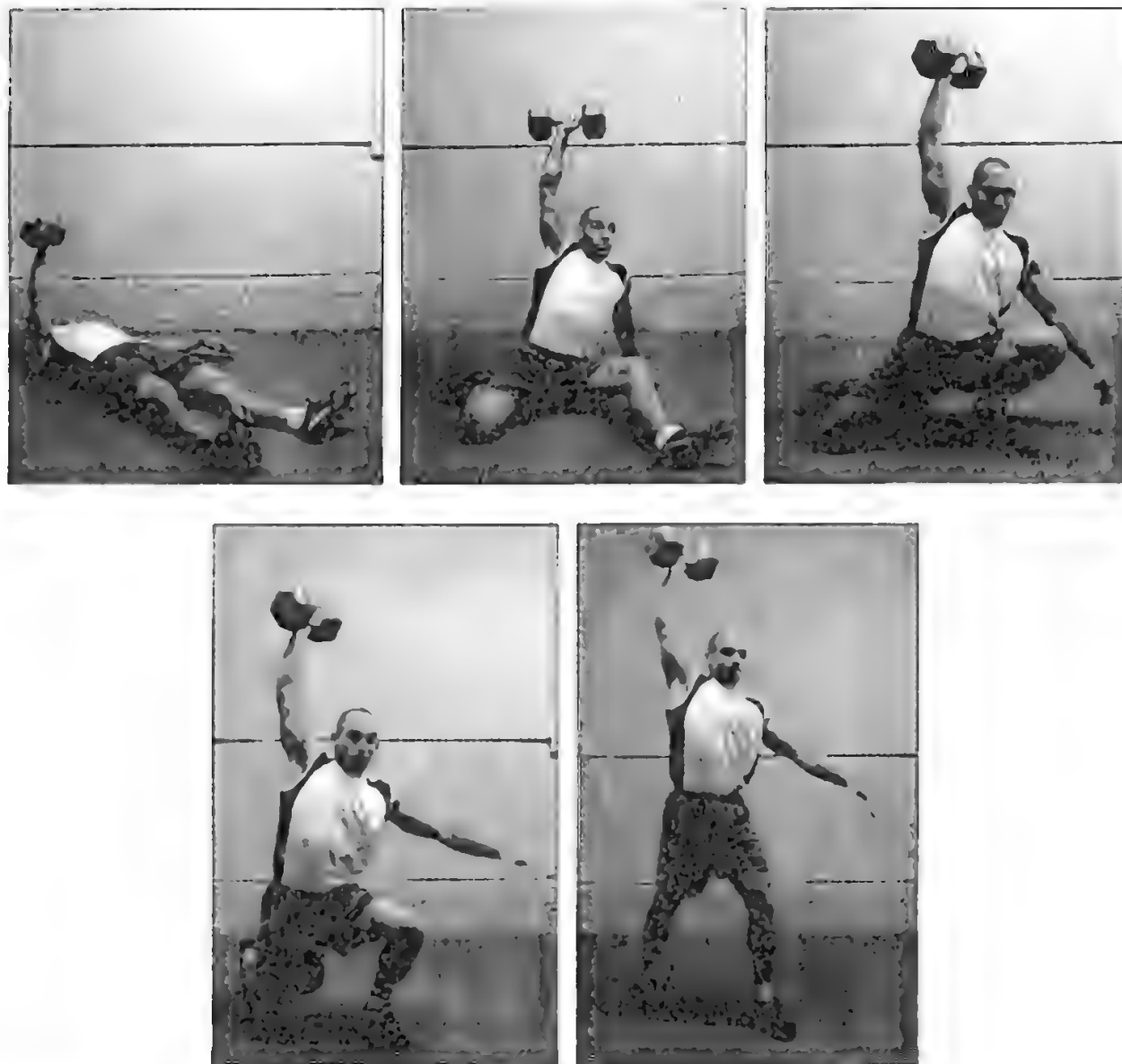


You should gradually strive to increase the weight used with the Russian twist. When a medicine ball no longer offers a challenge, you can use free weights. The homemade contraption shown for the one-legged squat is an excellent choice for this movement (page 87). Such a device will allow you to grip the weight from each side (weight sits in the middle), which will facilitate the twisting motion required for this exercise.

Heavy Russian twists are perhaps the best rotational exercise available.



The **Turkish Get-up** below is another tremendous core movement. This exercise will require core strength, flexibility, and balance.



To perform this old school movement from yesteryear, you will begin by lying on your back with a dumbbell held in an extended hand. You must then stand up without bending the arm. The dumbbell must remain in an outstretched arm, until it is completely overhead.

It does not really matter *how* you get up, as long as you can stand without bending the weighted arm. The entire core will remain tensed throughout this movement.

Upon reaching the standing position, you will reverse the motion, returning to the ground. Switch hands and continue, working both sides evenly.

Old time strongmen often performed this movement with a barbell. This movement becomes extremely challenging with a 7-foot barbell. A sandbag can also be used for a two-hand variation.

NOW WHAT?

At this point, you've seen several core movements. You are likely pondering the question below.

How do you put the pieces together to ensure a powerful, balanced core?

First, it is important that you understand the different actions of the core (extension, flexion, lateral flexion, rotation, and stabilization). Most core programs today fail to address these important actions. Earlier, the crunch was identified as a movement that failed to address critical actions such as rotational strength. There is no rotational component involved in an abdominal crunch.

Many athletes make the mistake of focusing all of their core work around a limited number of movements. Do not make this mistake.

I have provided several core movements in this chapter. There is no need to perform each movement during one core session. Rather, select an assortment of exercises that will target the entire core. A sample session could include:

- Standing Wheel Rollouts x 5
- V-ups x 15
- Russian Twists x 8 reps per side
- Weighted Back Extensions x 10
- Repeat this circuit 3 to 5 times

Finish with a Plank hold for time

As you can see, this circuit targets numerous objectives. Several motions are trained.

I have grouped these exercises as a circuit, where you would perform one exercise after another, and then repeat the entire circuit. I commonly perform my core work with circuits, as opposed to training one exercise at a time, for a given number of sets and reps. Training with circuits allows you to minimize the rest required between exercises. You should arrange the circuit so successive exercises target different movement patterns.

You can then rest 1 to 2 minutes between complete circuits.

Another example could include:

- The Flag x 5 reps
- Side Bends x 6 reps per side
- Weighted Back Extensions x 10
- Medicine Ball Twist Throws x 16 (8 per side)
- Repeat this circuit 3 to 5 times

Finish with a high rep set of Chinnies

In most cases, you can effectively train the core with 4 to 6 movements. You can then close with a finisher (ex. high rep set of chinnies or plank hold). Start the circuit with the most difficult movements (ex. the flag).

To determine the ideal number of repetitions, you must consider your particular objective, as well as the intensity of the exercise. Clearly, you will be able to perform higher repetitions with bodyweight movements such as the V-up. Typically, you will not be able to perform as many reps with more challenging movements such as the standing wheel rollout.

By incorporating variety into your exercise selection, you will have a mix of movements performed for lower reps, and those performed with moderate-to-high repetitions. A combat athlete needs strength and endurance throughout the core. Do not focus all of your attention to one objective (ex. strength), and overlook the importance of another (ex. endurance).

In a later chapter, I will provide several sample core workouts.

Get ready to transform your core into a power center!

VALUABLE ADDITIONS

"Thou hast not to like it, thou hast just to do it."

- Richard Marcinko

Thus far, much of our discussion has focused on bodyweight exercise and dumbbell training. This chapter will shift gears, focusing on additional tools and tips. My goal in creating this manual was to develop a one-stop resource for aspiring athletes. For this reason, I would like to discuss several additional topics that you can use to enhance your routine. I have long been an advocate of variety in training. Never limit yourself to one training style or tool.

SANDBAG TRAINING

Sandbag training is a perfect addition to a bodyweight and dumbbell routine. Sandbags are inexpensive and extremely challenging. You can replicate several lifts with a heavy sandbag. The bag will literally fight you, as you try to control the swaying motion of the sand throughout each lift. If you want to get functional, I highly recommend adding a heavy sandbag to your arsenal.

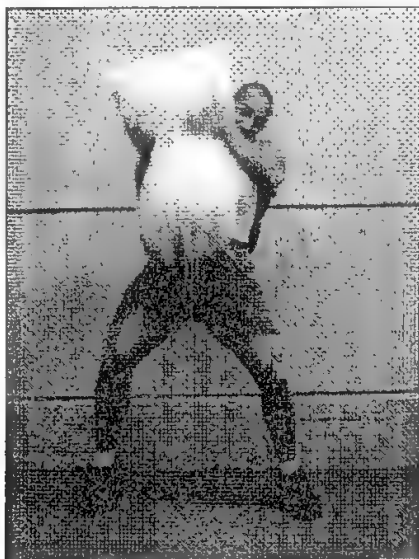
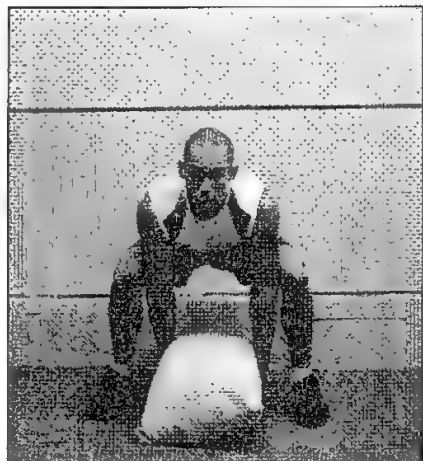
I have already created a book dedicated to sandbag training, so I will use this section to only briefly discuss some of my favorite movements.

When considering the addition of sandbags, I will remind you of the importance of targeting objectives, not specific tools. Once your objective has been determined, you must choose the exercises that will enable you to achieve your goals.

Consider a wrestler who is struggling with muscular endurance on the mat. Higher repetition movements with a sandbag will resemble the muscle actions needed during a wrestling match.

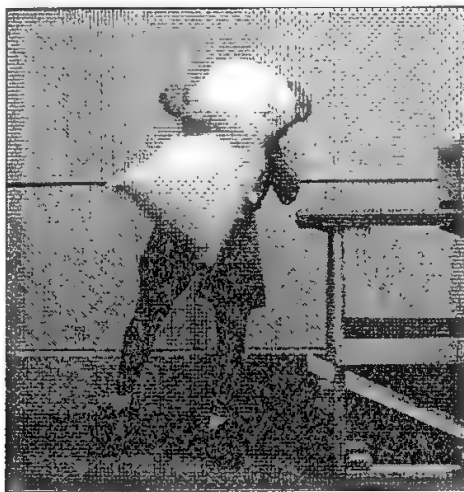
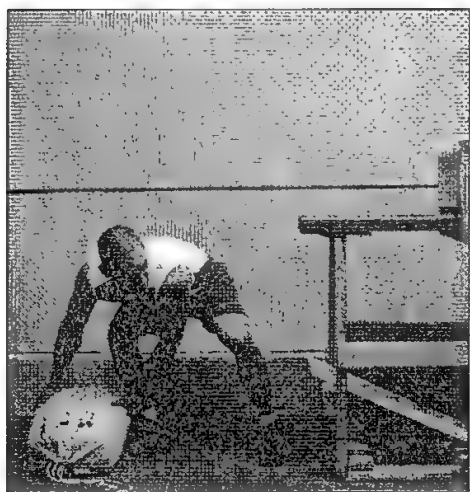
For example, **sandbag shouldering** (illustrated on page 188) can target this objective. This exercise targets the entire body. Set a timer for 5 or 10 minutes and challenge yourself to shoulder the sandbag as many times as possible. You will essentially *wrestle* the sandbag. This style of training is brutally intense, yet highly effective and functional to any ground fighter.

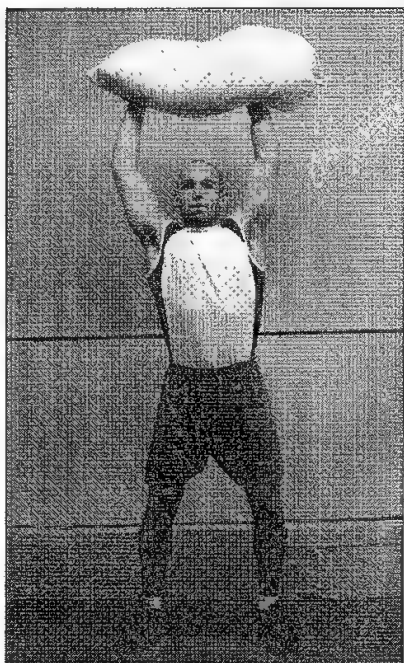
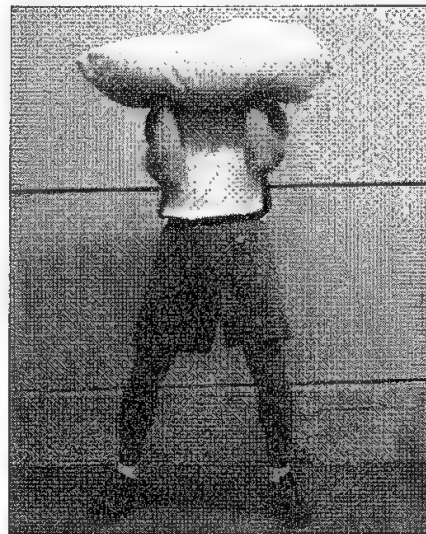
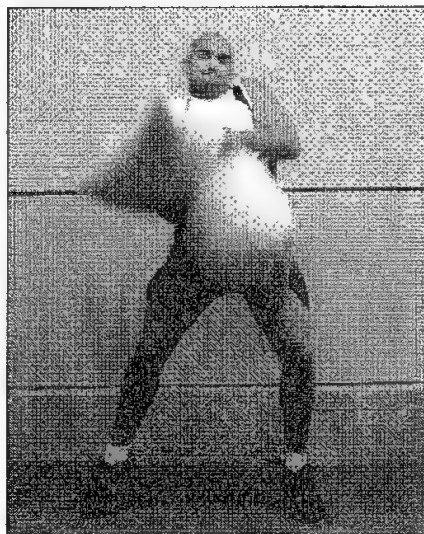
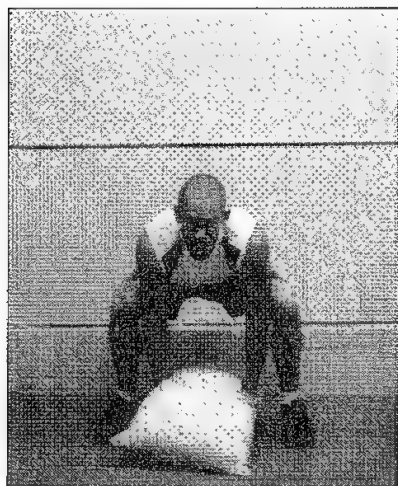
To shoulder the sandbag, you will begin by straddling the bag. Bend at the knees, so the thighs are almost parallel to the ground. Next, you will forcefully swing the bag upwards to one shoulder. Return the bag to the floor and repeat to the opposite side. This movement will develop strength, from head to toe!



Sandbag loading will develop tremendous rotational power. Perform this exercise at a brisk pace, with a heavy sandbag. You will begin with the sandbag to your side. Lift from left to right (or right to left), up to a raised platform. Pivot off the back foot as you load the bag. Upon loading the bag, return it to the ground. Your stance will alternate between repetitions.

For example, you will begin loading from right to left (left foot closest to the platform). The next rep will require that you face the opposite direction, loading left to right (right foot closest to the platform). Below, I am loading from right to left. For the next repetition, my back would be facing the camera, as I load left to right. You will continue loading, from right to left, and then left to right.





The **sandbag clean and press** is one of the most challenging and effective total body exercises available. This exercise could be described as lifting *something* heavy from the ground and putting it over your head.

Functional enough for you?

For this movement, you will begin in a similar stance to that used when shouldering the sandbag. From this position, you will clean the sandbag up towards the shoulders. Catch the bag in a partial squat position as you complete the clean. Finally, press the bag overhead.

Catching the bag at the shoulders can be a bit tricky when battling with a heavy sandbag. This obstacle only adds to the challenge.

Sandbags are not carefully constructed like barbells. Heavy sandbags are unpredictable monsters. It is your job to tame the bag! You will gain plenty of strength in the process.

You can replicate literally any barbell movement with a sandbag. Sandbag shouldering, sandbag loading, and the sandbag clean and press are just three of my favorites. These movements will quickly develop real strength. A heavy sandbag is a valuable addition to any strength workout.

To drive home the importance of targeting objectives, rather than specific tools, let's look at a sample strength workout.

This workout includes bodyweight exercise, dumbbells, and sandbags.

Sample Strength Workout

- | | |
|--------------------------------|-------------------------|
| 1. Sandbag Clean and Press: | 4 x 3 reps |
| 2. Dumbbell Snatches: | 4 x 5 reps (per arm) |
| 3. Sandbag Shouldering: | 4 x 6 reps (3 per side) |
| 4a. Weighted Dips: | 4 sets |
| 4b. Weighted Towel Pull-ups: | 4 sets |
| 5. Dumbbell Swings (Finisher): | 3 sets of 15 per arm |

Workout Notes

- Exercises 4a and 4b are alternated. For example, perform one set of dips, rest, and then continue with one set of pull-ups. Continue until 4 sets of each exercise are complete. Rest one-minute between exercises.
- Exercise 5 is designed as a finisher. Limit rest between these three sets to 30 seconds or less.

OVERLOOKED AREAS

Let's continue our discussion of valuable additions by looking at two critical areas that are commonly forgotten, namely the hands and neck.

As a combat athlete, the hands are vital to your success. Strikers such as boxers will use the hands to launch offensive attacks. Ground fighters will use the hands to grab and manhandle their opponents. A strong set of hands is imperative.

Unfortunately, most fighters do not train the hands. The only athletes training their hands are those who are recovering from an injury. The training becomes reactive, as opposed to proactive. I myself was guilty of this problem. It took several broken hands before I truly became dedicated to training this vital area. I learned the hard way, and encourage you to learn from my mistakes. Do not neglect the hands. Fighting with a broken hand is a painful experience. I've been there before, and don't want to go back.

For starters, the fingertip pushup and knuckle pushup are both excellent for the hands and wrists.

Fingertip pushups may feel painful at first. This exercise will take some getting used to. With regular practice, you will quickly perform several repetitions without any problems. I highly recommend this exercise for the fingers and hands.



Knuckle pushups are also excellent. This variation will enhance wrist stability.



Another excellent wrist and forearm strengthener can be built from a homemade dumbbell handle. You will load one end of the handle, with the weight placed towards the far end (creating an uneven dumbbell).

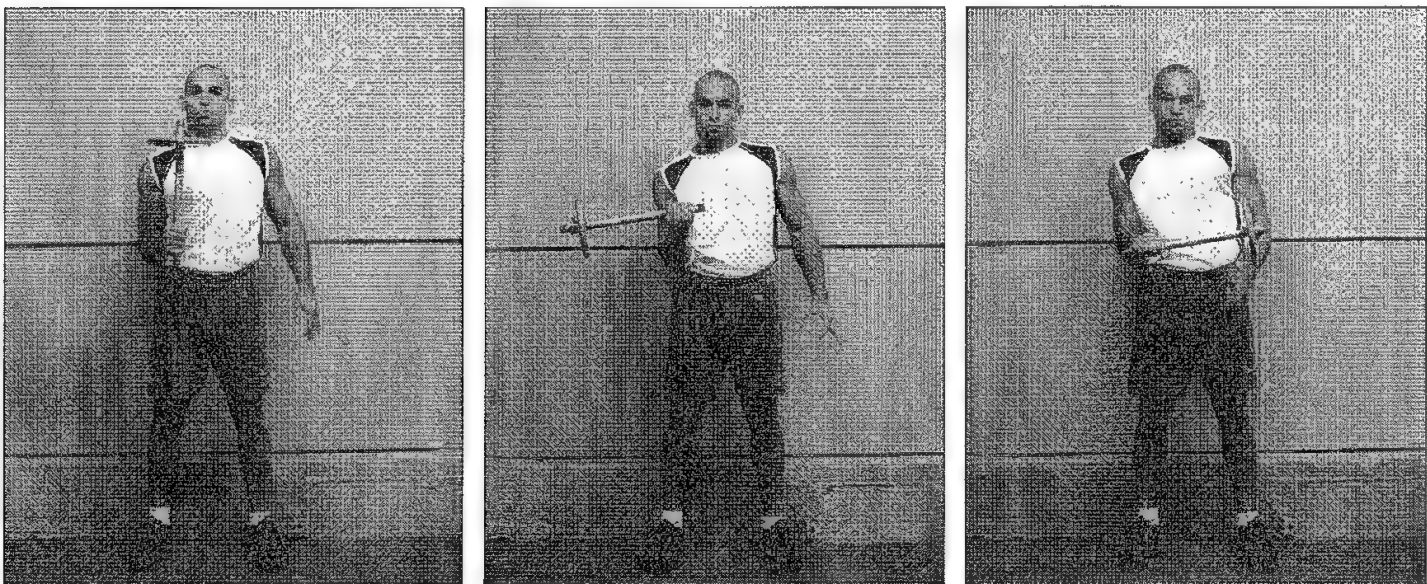
With your elbow by your side, you will rotate the wrist in one direction, so the palm faces the sky. Next, rotate the wrist in the opposite direction, so the palm faces the floor. Keep the elbow stationary throughout this movement.

I recommend using an 18" dumbbell handle for this exercise. You can also add to the difficulty by creating a thick handle. Simply wrap the bottom portion of the handle with duct tape (as illustrated earlier). You can then add a baseball bat grip for a secure gripping surface. By performing this exercise with a thick handle, you will have one of the most challenging, and effective forearm and wrist strengtheners available.

If you find the 18" handle is too difficult to control, you can slide your hand closer to the weight. This movement becomes less challenging as your hand approaches the loaded side.

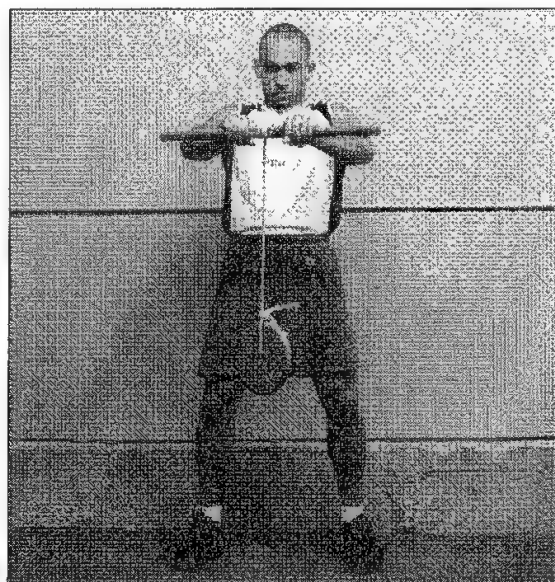
Start slow with this exercise, as it is much more challenging than it appears.

I perform this exercise every other day. This movement is definitely a personal favorite.

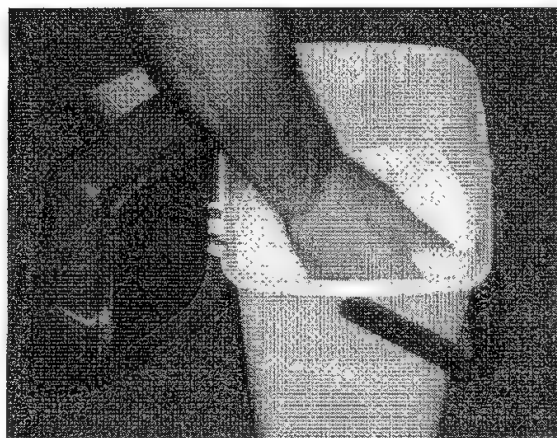


Another useful forearm developer can be created with a dowel, rope, and weight. Simply attach a rope to a dowel, and hang a weight at the end of the rope. Roll the weight up and down (both frontward and backward).

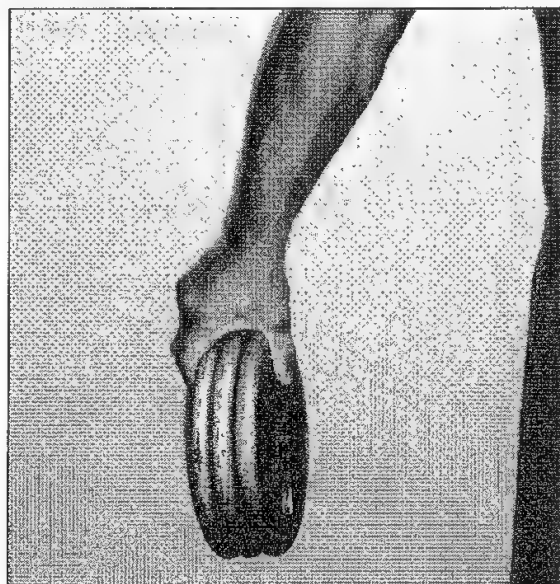
As with the previous exercise, you can make this movement more challenging by creating a thick handle. Either buy a thick dowel or use the duct tape approach.



Continuing with the homemade theme, you can quickly convert a bucket of rice into an effective grip developer. Simply fill a bucket with rice. Practice grabbing and twisting the rice in your hand. As you grab the rice, simultaneously twist in a downward, corkscrew motion. Twist your hand clockwise and counter-clockwise. This exercise will quickly strengthen the hands.



Another useful grip exercise can be performed by simply pinching together several 10 pound plates. Hold the plates for time. As your strength improves, you can add additional plates. This exercise will develop pinch grip strength. Pinch grip strength requires a strong thumb. Thumb strength is often overlooked.



In addition to these low-tech options, I highly recommend the use of handheld grippers. I have a gripper in my car that I use whenever I drive. For a low budget alternative, you can use a new tennis ball. Squeeze the tennis ball with as much force as possible.

THE NECK

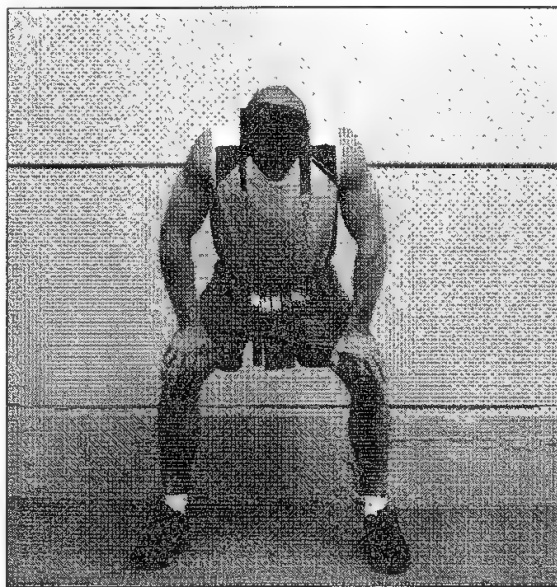
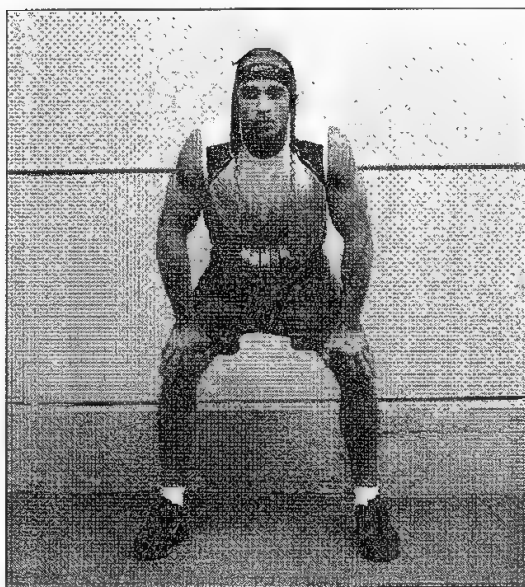
The neck is another candidate for the title of most neglected. Neck training is almost unheard of in today's gyms. The neglect is unfortunate, as a strong neck is imperative for knockout prevention.

A fighter who lacks the ability to take a punch is known to have a *glass jaw*. Almost every fighter with a glass jaw also has a pencil neck. A strong neck will help reduce the acceleration of the brain following impact. As your neck strength improves, you will be more tolerant of incoming punches, therefore reducing the backward and sideways snap that commonly results in a knockout.

It does not take a rocket scientist to observe the thick neck musculature of past champions who were known for their ability to take a punch. Find time for neck training, or find time for a 10 count!

A neck harness is a good start to your neck training needs. You can buy a harness for around \$10. Every fighter should have a harness to train the neck.

Simply hang free weights from the harness, and curl the head up and down. This exercise is one of the best for neck development.



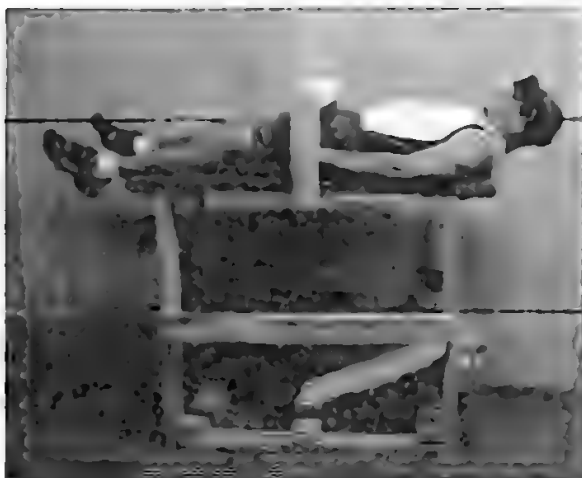
A wrap-around neck weight is another useful neck training device. This training tool is common among most boxing equipment suppliers. You can perform several exercises with the wrap-around weight.

These movements can be performed off any bench. Curl the head upward while lying face down, face up, and from a sideways position.

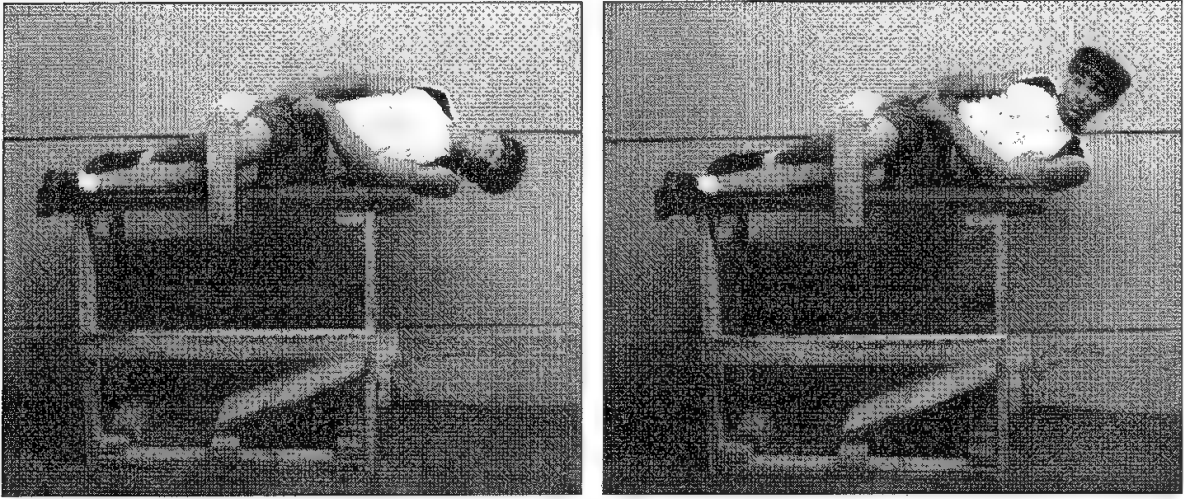
Face Down



Face Up



Sideways



These exercises can also be performed without the wrap-around weight. A training partner or coach can apply resistance to your neck with a towel. The towel will wrap around your forehead.

For example, while lying in the face down position, the towel would wrap around the back of your head. Your partner will pull down, as you resist his pressure by lifting the head towards the ceiling.

A towel and a training partner make an ideal neck *training kit*. As your strength improves, your training partner can apply more pressure. There is no need to buy heavier wrap-around weights.

Find time for neck training.

MINI-WORKOUTS

When considering the importance of neck and hand training, it becomes clear that you must make time for each objective. The real question is how and when to include these exercises.

First, let's get one thing clear. Don't worry about *finding time* to perform these exercises. You need to *make time* for these exercises. Huge blocks of time will not fall on your lap. You need to plan ahead and make time for these valuable training objectives.

One way to target these overlooked areas is by performing several mini-workouts throughout the week. By planning for a mini-workout, you have assigned a specific time to train these critical areas. In doing so, you have essentially *made time* for these exercises.

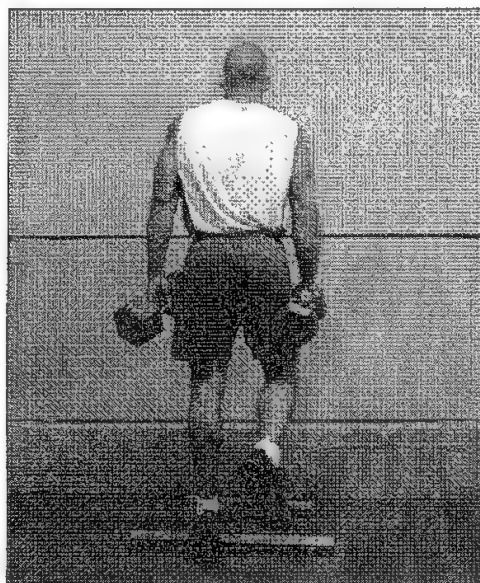
All too often, an athlete will begin a workout with the intention of finishing with hand or neck work. Unfortunately, as fatigue mounts, neck training gets put on the backburner. The athlete cuts his workout short, reassuring himself with some nonsense such as "I'll train my neck tomorrow."

This *skipping* pattern becomes a habit, and his neck begins thinning out like a pencil.

Don't fall into this trap. Plan for a 10 or 15-minute mini-workout. For example, you could target the neck, hands, and calves in one brief session. I have added the calves to this list, simply because this muscle group is also commonly overlooked. Many athletes focus all of their attention to the quads and hamstrings. The calf muscles are often forgotten.

The calf muscles absorb shock and stabilize the ankle and knee during activities such as running. Furthermore, a fighter spends a lot of time on his toes. Nimble boxers will often circle the ring on their toes as they move in and out of harm's way. A springy ring surface can leave the calf muscles tired, which negatively influences footwork. This is one reason why boxers spend so much time jumping rope.

The calf muscles can be trained with simple **calf raises**, where you will rise on the toes, one foot at a time. You can hold weights to increase the strength benefits. You can also perform the movement with the toes elevated on a board or weight plate to increase range of motion.



Another excellent calf exercise is a one-legged ankle jump. Simply spring upward into the air, one leg at a time. With the knee locked (to prevent assistance from the quads), spring upward, using the muscles of the calf to initiate the action. You should prevent the heel from contacting the ground until the set is complete. Work one leg at a time for 10 to 20 reps.

A sample mini-workout could include:

Sample Mini-Workout

- | | |
|-----------------------------|-----------------|
| 1. Fingertip Pushups | 15 reps |
| 2. Knuckle Pushups | 15 reps |
| 3. Neck Work* | 12 reps |
| 4. One Leg Ankle Jumps | 15 reps per leg |
| 5. Uneven Dumbbell Rotation | 5 reps per arm |

Repeat circuit 2 to 4 times

Workout Notes

- You will perform this workout as a circuit. Work through each exercise with minimal rest. After finishing the circuit, rest one-minute and repeat. Find time for 2 to 4 circuits.
- During each pass through the circuit, choose a different neck exercise. For example, you could start with the neck harness, and then proceed to side-to-side flexion with a wrap-around weight.

This mini-workout is just one of many possibilities. You can mix and match various exercises. In addition to training the neck, hands, and calves in one session, you can create more specific mini-workouts. For example, many athletes integrate neck work with core training. You could finish a core workout with neck training. If you are like me, you may prefer this option, which will free up some time during the mini-workout. Your mini-workout could instead focus more attention to the hands and forearms.

Sample Mini-Workout

- | | |
|-----------------------------|--------------------------|
| 1. Fingertip Pushups | 15 reps |
| 2. Knuckle Pushups | 15 reps |
| 3. Uneven Dumbbell Rotation | 5 reps per arm |
| 4. Wrist Roller | Roll up and down 5 times |
| 5. Pinch Grip Training | Perform 4 holds per hand |

If however, you frequently train with thick handled dumbbells and exercises such as rope climbing, sledgehammer swinging, and towel pull-ups, you may not need to direct as much attention to the hands and grip. Clearly, mini-workouts must be tailored to your specific needs.

Suppose you wanted to focus more attention towards strength development. Isometrics would be an ideal mini-workout. Bruce Lee used to perform a 96 second isometric routine on a daily basis. He would work eight static holds, each for 12 seconds at maximal intensity (Little, 1998). Surely you can find time for 96 seconds of exercise. Isometrics offer plenty of bang for the buck. You can make substantial strength gains with a few mini-workouts per week.

Mini-workouts can also be performed in unconventional places. As a young boxer, I used to perform calf raises in the shower. Another example is the handheld gripper mentioned earlier. I will commonly squeeze the gripper while driving my car. I am training the hands while traveling from one destination to another. Who said you couldn't find time?

As you can see, there are several options for mini-workouts. The workout can be a few minutes or 15 to 20-minutes. You could perform one exercise, or several exercises. No matter what you do, just remember that doing something is always *better than nothing*.

SUMMARY

Many athletes search and search for the silver bullet to training. Unfortunately, the silver bullet does not exist.

An athlete has several objectives that must be addressed when training. You should always search for new methods and systems to enhance your routine. The information from this chapter can serve as a valuable addition to any training program.

Finding time for a few mini-workouts can enhance neglected areas such as the neck and hands. Just a few minutes here and there can be a lifesaver in the heat of battle. I only wish that I took the time to train my hands as a young athlete. I neglected the hands and suffered through several injuries. Don't make the same mistakes that I made.

Furthermore, training tools such as heavy sandbags offer functional benefits to any strength program. Focus on objectives, not training modalities. If the shoe fits, wear it. A sandbag is a perfect fit to almost any combat athlete's routine.

Continuous improvement is the name of the game.

Never settle.

NOT FINISHED YET

"Fight one more round. When your arms are so tired that you can hardly lift your hands to come on guard, fight one more round. When your nose is bleeding and your eyes are black and you are so tired that you wish your opponent would crack you one on the jaw and put you to sleep, fight one more round - remembering that the man who always fights one more round is never whipped." - James Corbett

The 50 day program provided in the next chapter will incorporate the use of several *finishers* at the conclusion of certain workouts. The finisher will consist of a movement (or movements) designed to present one last challenge (physical and mental) before the session ends.

You will have already endured a strenuous training session. The finisher will force you to "suck it up" one last time. Finishers are one of the most effective mental conditioners available. You will be forced to fight through unbearable fatigue. Regular use of an intense finishing movement will produce considerable improvements in work capacity and mental toughness.

These exercises will enhance attributes that cannot be measured with traditional biochemical tests. Willpower and mental toughness are essential in the combat sporting world. An athlete may be in excellent condition, but no one is immune to fatigue. Invincibility does not exist in the real world. A highly trained athlete is more tolerant of fatigue, capable of recovering much more quickly than the untrained athlete, but he still remains vulnerable at times. It is during *these times* that the athlete shows what he is really made of. It is much more challenging to display skill under demanding conditions. All fighters are fresh in the first round of battle. The true sign of a warrior is their ability to remain strong and fight through fatigue.

Consider a competitive fighter who has just endured 11 brutal rounds. His body is tired and sore. Everything hurts, yet he must answer the final bell and fight one last round. The mental fortitude needed to push through such unbearable fatigue is effectively trained through various finishing movements.

As a competitive athlete, you must be prepared to stare fatigue in the eyes. Champions separate themselves from contenders by learning to mask fatigue

and fight on, despite what would be deemed unbearable by the average person. Past greats such as Sugar Ray Leonard and Muhammad Ali had the ability to box when physically exhausted.

Many young fighters perform conditioning drills with the hope that they will never become fatigued inside the ring. This approach to training works well in theory, but fails in the real world. The time will come when fatigue sets in. What will you do when faced with fatigue and an aggressive opponent?

It is during these times that you define yourself as a fighter. Will you fight, or will you fold?

The preparations that you make at the gym will often determine the answer to this question. It is easy to fight well when you are fresh and rested. It is a different story when you must fight through complete exhaustion.

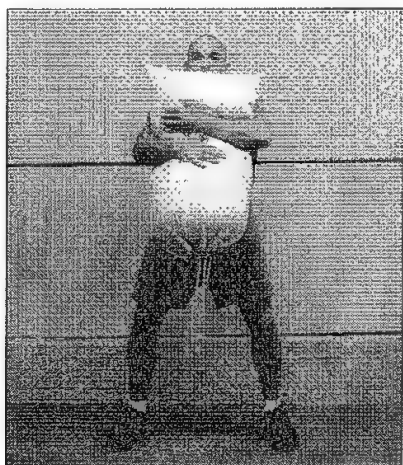
If you have not performed when fatigued, you will not know how to react in the heat of battle. When training to fight, you must challenge yourself physically and mentally. The recent fear of overtraining has caused many athletes to become victim of "under-training". These individuals have become paranoid of hard work, for fear it will cause overtraining.

World champions from yesteryear did not train in fear of overtraining. They raised the bar on what was expected of them as athletes.

These individuals learned to fight through fatigue. To develop this ability, you must work hard at the gym. You will not develop this level of conditioning in a few days or even a few weeks. It takes time, a consistent effort, proper nutrition, and loads of hard work.

Who cares if you have speed and power in the first round, if you are sucking wind in the second or third? Train for the long haul. Train the body and mind.

FINISHING MOVEMENTS



A heavy sandbag is perhaps the ultimate finishing tool.

Bear hug a heavy sandbag and begin walking. Strive to walk for several minutes at a time. The heavy bag will eventually become unbearable.

You can perform this exercise anywhere. Simply walk back and forth until your grip gives out. It will not take long for this exercise to finish you.

In addition to building mental toughness, the sandbag bear hug may help your performance as a wrestler. Kraemer, Fry, and colleagues (2001) found that "isometric grip strength and 'bear hug' isometric strength are both dramatically reduced over the course of a wrestling tournament" (Kraemer and Fleck, 2004). Training with the sandbag bear hug will certainly improve these physical qualities.

Farmer's Walk - Grab a pair of heavy dumbbells and begin walking. Walk for distance or time. Thick handled dumbbells are an excellent choice for this movement. You will quickly develop a pair of *Popeye* forearms. Continue walking until you can no longer carry the weight.



A **stationary wall squat** is another excellent finisher. This movement will challenge the body and mind.

Assume a squat position (thighs parallel to the floor) with the back supported against a wall. Hold this position for time. Focus on maximally contracting the legs. Some athletes may find it easier to achieve maximal tension by squeezing a basketball in between the thighs.

In addition to its role as a finisher, I commonly integrate the wall squat with explosive exercises such as the squat jump. For example, you will begin with a 60 second wall squat (focusing on maximum tension), and then continue with 10 squat jumps (therefore exploiting the benefits of the static-dynamic protocol). The wall squat is one of few isometric exercises that I perform for extended periods (ex. 60 seconds). As mentioned earlier, much of our isometric work will consist of shorter, highly intense contractions. The wall squat is different, as many athletes will need more time to fully benefit from this movement.

Other popular bodyweight finishers include squats and pushups. For example, finish your workout with one moderate-to-high repetition set of each exercise. It will not take long to perform one set of squats and one set of pushups. Do not push to complete failure, rather you should stop a few repetitions before failing. For example, if you can perform 50 pushups, you should stop at 40 or 45 repetitions.

You could even incorporate a weighted vest into the finisher. I recommend this option to those who can perform several hundred bodyweight squats. The extra weight of the vest will save you time, while packing plenty of added benefits.

Another worthwhile option is the Tabata protocol. I will often finish a workout with a quick set of Tabata squats or pushups. A brief 4-minute Tabata interval session is both efficient and effective. It is an excellent way to ensure that your workout was of adequate intensity.

Brief intervals are also useful for those athletes who wish to focus more attention to strength development. Rather than dedicating entire sessions to conditioning, you could simply finish 2 or 3 strength workouts per week with a brief interval sequence. The Tabata protocol is just one of many options. Rope skipping is another ideal finisher. For example, after a strength workout, you can finish with a few high-speed intervals on the jump rope. A session consisting of 6 x 1-minute intervals, separated by 30 seconds of rest will last less than 9-minutes. Such a finishing session is short, yet intense. The brief workout will not detract from strength and muscle mass development, while still offering plenty of anaerobic conditioning benefits, as well as fat burning after effects.

Density training can also be applied in this situation. Close your strength workout with a 5 or 10-minute session of 50 meter sprints. How many sprints can you complete during this time? The sprint session is brief, yet extremely effective for conditioning and fat loss.



Not up for sprint or interval finishers? No problem! Finish your workout with a 1-mile run. View the 1-mile run as a race for your life. Run as hard as possible. You can always find time for six or seven minutes of exercise.

Dumbbell swings can also be an effective finisher. Choose a weight that you can perform for approximately 12 to 15 repetitions per arm. A few sets of swings will surely leave your heart beating like a drum.

Two last favorites include sledgehammer swinging and heavy bag punching. For example, finish your workout with a 5 or 10-minute round on the heavy bag or sledgehammer.

Working through a final round on the heavy bag is an excellent way to develop the ability to fight through fatigue.

FINISHING THE FINISHER DISCUSSION

I highly recommend the use of a finishing movement. While not all workouts should end with a finisher, it is a good idea to incorporate one of these drills at least one or two times per week.

The finisher should be brief, but intense. Remember, you have already performed a quality workout. Use the finisher to squeeze out a few last benefits, while building mental fortitude. I cannot stress how useful this style of training can be for a fighter. In just a few minutes, you can truly develop indomitable willpower.

PROGRAM CREATION

"Being busy does not always mean real work. The object of all work is production or accomplishment and to either of these ends there must be forethought, system, planning, intelligence, and honest purpose, as well as perspiration. Seeming to do is not doing." - Thomas Edison

Thus far, I have demonstrated several exercises and drills. Constructing a workable puzzle from these pieces can be a daunting task. Clearly, one is not expected to perform each exercise in one given week.

Rather, my goal in creating this program is to provide you with all the information necessary for a lifetime of infinite intensity. One must constantly incorporate new exercises and challenges to promote continuous improvement and motivation. This chapter will shed light on the often complex task of creating a training program specific to your goals.

As a combat athlete, your goals are unique from others. Few, if any, sports require such a multifaceted skill set. Typically, scientific studies fail to address the combat sporting athlete. Most studies are related to sports such as Olympic weightlifting.

Consequently, the combat sporting world must fend for itself. We cannot rely solely on science, as there are few studies related to the combat arena. We must take bits and pieces from other studies, and then apply them to the combat sporting world.

Only those who have stepped into the combat arena can appreciate the complexity of these arts. There is no such thing as a *superior training plan* for combat athletes. Such a plan does not exist.

In the words of psychiatrist Carl Jung, *"The shoe that fits one man pinches another."*

What is best for Joe, may not be best for John, and vice versa. Clearly, individual customization is necessary for successful program design. I can point you in the right direction, but you may need to make adjustments based on your specific goals and abilities.

PERIODIZATION

When considering program design, periodization is perhaps the most commonly debated subject. Most will agree that a periodized program is superior, but what constitutes successful periodization?

Mel Siff offers one simplified definition, stating that “periodization refers to the long-term planning, or cycling, of a series of training sessions to enable an athlete to reach peak form on specific occasions” (Siff, 2003b).

Fleck and Kraemer (2004) use the following definition:

“Periodization of training refers to planned changes in the acute training program variables of exercise order, exercise choice, number of sets, number of repetitions per set, rest periods between sets and exercises, exercise intensity, and number of training sessions per day in an attempt to bring about continued and optimal fitness gains.”

In laymen’s terms, periodization refers to the organization of one’s training plan to best prepare for a specific objective or event (ex. preparation for a title fight).

Several studies confirm that periodized programs result in much more consistent fitness gains, when compared to nonvaried training programs. In essence, a well thought plan is far superior to a random, day-by-day training program. You cannot create workouts on the fly, with no rhyme or reason and expect long-term improvements. You must plan for the future.

Would an architect build a high-rise building without a plan?

Of course not!

You must become the architect of your body.

THE DETAILS

When we consider that periodization simply involves the organization of one’s training plan, it appears straightforward. Unfortunately, there are several variations to periodization, some more effective than others, leaving athletes and trainers confused and frustrated.

Consequently, many trainers prescribe generic models. Essentially, a general model is force fed onto complex events such as combat sports. The mentality is that "as long as it is periodized" it must work.

If life were only so easy...

The multifaceted nature of the combat sporting world requires unique attention.



Before discussing the specific variations of periodization, let's first gain an understanding of why we should embrace the general concept.

Why bother?

Besides the obvious physical benefits, there is an important mental factor worth consideration. Training with the same general plan from week to week gets downright boring. You must incorporate new means of stimulation to spark interest and motivation. Training should not feel like an automated job, where the task remains the same each day. The body and mind need new challenges to foster positive and continuous improvements.

When discussing periodization, one of the common arguments in favor of this model is the prevention of *physical staleness*. For example, rather than training with heavy loads all the time, a periodized plan will call for the development of other qualities (ex. speed strength). Lifting heavy loads over and over again can lead to physical burnout.

But what about the mental side of the equation? No one ever considers *mental staleness*. Have you ever dreaded your trip to the gym? Do you want to just get the damn workout over with? Are you bored with training in general?

If this happens, it is time for a change. A periodized program prevents these problems from sprouting in the first place. A positive outlook on training (mental) will surely foster physical improvements.

And what about physical burnout?

You are destined to physical staleness if you subscribe to a one-dimensional plan. The body will adapt to any training style if it is continued indefinitely. Variety is imperative.

Furthermore, a periodized program allows an athlete to pinpoint specific objectives necessary for his success in the competitive arena. An old saying states that *everything happens for a reason*. These words should be applied to every workout. A well-planned program ensures that every piece of the puzzle is selected for a specific reason.

Consider the job of a sniper. A successful sniper gauges his shot. He must calculate range estimates, considering the impact of wind and other weather factors. Without proper planning, the sniper will never hit his target.

As an athlete, you must also have a target, as well as precise plans to hit your target. For example, a fighter preparing for a world title match has a clear target, to win a world championship. Without a proper plan, his chance of success is slim. We will not make this mistake.

Let's now look at several variations of periodization.

A *linear model* of periodization is the most common method in today's sporting world. This method originates from the research of Dr. Leonid Matveyev. With this model, training intensity gradually increases as volume decreases. The goal is to produce maximum intensity just prior to the competitive season.

Although variations exist, the traditional linear model consists of a hypertrophy phase, followed by a strength phase, a power phase, a peaking phase and finally a transition phase.

Essentially, you start with lighter weights to promote hypertrophy, and then gradually increase the load as you approach the competition. This model revolves around an athlete peaking for a specific competition. For example, a 12-week plan may consist of four separate three-week phases. Each phase will target a specific objective (ex. first phase = hypertrophy emphasis).

Unfortunately, periodization is often misunderstood and applied incorrectly. Trainers from various sports apply the Matveyev model (as is) to their athletes. One model is applied to numerous sporting events. Unfortunately, there are no *one-size-fits-all* models that apply to athletes from all sports.

For example, it simply does not make sense to prescribe a hypertrophy cycle to an athlete who must compete in a precise weight class. Why would a wrestler want to pack on muscle mass, which will eventually lead to problems making weight for his contest? Suppose you are competing in a weight class with a 175 pound limit. Does it make sense to bulk up to 185 pounds, and then be forced to drop the added weight through harsh means such as dehydration?

Those who prescribe generic models to fighters do not understand the notion of competing within specific weight classes. Most fighters have enough trouble making weight. The periodized program should not add to the problem by calling for unnecessary muscle mass.

Clearly, flaws exist within the linear model. Most notably, athletes who take part in frequent competitions are unable to peak for each event. For example, suppose an amateur fighter will be fighting every week, or every other week (a common practice). The classical periodization model does not fit the bill for this athlete. It is not possible to continually rotate through different cycles when competitions take place with such frequency. To further complicate matters, many amateur and professional fighters compete throughout the year. The idea of a *season* does not exist. The *season* often encompasses the entire year.

Other fighters commonly accept bouts with little notice. An opportunity may come about that is simply too good to pass up. For example, a promoter may call you with a chance to fight in a main event, which is only three weeks away. You must prepare for the bout without the luxury of a traditional 12-week periodization model.

Another flaw of the classical approach is the limited focus that occurs during each cycle. The term *linear* is defined as involving a single dimension. This style of periodization stresses one motor ability per cycle. One objective (ex. hypertrophy) is targeted at the expense of all others. For example, suppose one periodized cycle emphasizes hypertrophy for four weeks. The second four-week phase shifts gears to strength development with a lower rep range. While working on strength, many of the hypertrophy benefits from the first cycle will be lost. While working on hypertrophy, maximal strength will be sacrificed. Essentially, one function is *trained*, while previously developed functions are *detrained*. What good is it to progress in one direction, while simultaneously declining in another?

At this point, you may be reading this discussion, wondering why you should even bother with periodization. With all of these flaws, is periodization all that it is cracked up to be?

Do not lose hope on periodization, just remember that periodization is far from an exact science (as some would like you to believe). Several options exist when considering the management of training load, volume, intensity, and frequency. It is foolish to believe that one model can properly manage each variable for the entire athletic population.

Adjustments to the original linear model are typically required. The linear model is not *bad*, but is limited if used without modifications. Professionals in today's strength and conditioning business tend to be either entirely for or against the linear model. There are those who swear by this model, while others firmly despise the linear approach.

My opinion on the linear model falls in the middle. Most programs are flawed, at least for some populations. The linear model is often useful for novice athletes. Furthermore, several studies have shown that the linear model is superior to nonvaried training. To those who view the linear model as *bad*, science certainly suggests that it is not *as bad* as many alternatives.

Kraemer and Fleck (2004) cite numerous studies that illustrate the effectiveness of periodized training. Once again, the effectiveness of this model relies largely on proper implementation. There is a right way and wrong way to do just about anything. Periodization is no different.



Linear methods are not the only option for periodization. Nonlinear models are becoming increasingly popular among strength and conditioning coaches.

Nonlinear programs vary intensity and volume within each week. For example, you could target speed strength on one day, while targeting maximal strength on another day (in the same week). With this approach, you can overcome one major flaw of the linear model (the regression/progression of distinct motor abilities).

With a nonlinear model, fitness gains can continue throughout the year (over a long season). The linear model fails in this regard. With the linear model, strength and power gains peak before the competitive season. Unfortunately, major competitions do not take place until the end of the season. Gains realized at the beginning of the year will fade throughout the season. Essentially, the athlete peaks for the first day of a season, with no consideration for the rest of the sporting season.

When considering combat athletes who compete yearly, nonlinear methods are often much more applicable. With such methods, the athlete can continue to improve physical qualities throughout the year. If a fight is offered on short notice, the athlete can accept the competition without second guessing his physical strength and conditioning.

Kraemer and Fleck discuss one form of nonlinear periodization known as undulating periodization.

“Undulating periodization varies training volume and intensity so that fitness gains occur over long training periods, such as long seasons, and treats peaking of physical fitness at a certain point in time as a minor training goal” (2004).

Different training zones are used over weekly or biweekly periods. For example, 4 to 6 reps could be trained one day, 8 to 10 reps another day, and 12 to 15 reps on the third day. By varying repetition ranges, this model is thought to produce continued gains in fitness over several months, while steering clear of training plateaus.

So, how does undulating periodization stack up to linear periodization?

One notable study conducted by Rhea et al, (2002) compared linear periodization with daily undulating periodization for strength improvements. The undulating group altered training volume and intensity daily. The linear group employed a traditional periodization program. With the linear group, volume decreased with an accompanied increase in intensity over the 12-week period. At the end of the study, those following the undulating plan made significant strength gains compared to those who followed a linear plan. The study concluded that the undulated model provided the ideal variation and stress to produce maximal strength gains.

One theory for the success of the undulating model is that you will target larger, more powerful Type II motor units with lower repetition work, and then allow these motor units to rest/recover during higher repetition workouts. The Type II motor units are capable of much greater levels of force than their counterpart Type I motor units. Type II motor units also fatigue much quicker than Type I.

By varying rep ranges with the undulating model, one is able to rest the Type II motor units with higher repetition workouts. In essence, the training week is divided into sessions that target each motor unit (Type I and II). The result is greater strength (via Type II increases) and greater size (via higher rep work).

Such a protocol is ideal for an individual seeking to gain size and strength.

A sample undulating model could include:

- | | | |
|--------|---|--------------------|
| Day 1: | 6 sets of 2 to 3 reps | (Maximal Strength) |
| Day 3: | 3 sets of 8 to 10 reps | (Hypertrophy) |
| Day 5: | Focus on speed strength and explosive strength utilizing plyometrics, complex training, and/or the static-dynamic protocol. | |

This sample week makes time for maximal strength, hypertrophy, and speed/explosive strength. This protocol could be used to gain size and speed/strength. Typically, I would not recommend such a program to a combat athlete however. There is no need to dedicate entire sessions to hypertrophy development (particularly sarcoplasmic hypertrophy).

If you are not competing within a specific weight class, such a lifting plan is worth consideration. You will gain size and strength, while preventing plateaus and overtraining.

MORE OPTIONS

Hopefully, I have not put you to sleep yet. Fortunately, we are almost there. We are close to discussing the sample training plan!

First, we must revert to the idea of conjugate periodization, discussed in an earlier chapter. As mentioned, conjugate periodization involves, "successfully introducing into the training programme separate, specific means, each of which has a progressively stronger training effect, and coupling them sequentially to create favourable conditions for eliciting the cumulative effect of all the training loads" (Siff, 2003a).

Westside Barbell has essentially put conjugate periodization on the map. This model has been used effectively to produce many of the strongest men in the world.

At first glance, conjugate periodization may look similar to undulating periodization. The similarity is that different rep schemes are used throughout the week. The primary difference is that the conjugate model focuses on specific (multiple) strength qualities. For example, Westside Barbell focuses much of their time to maximal strength and explosive strength. They are not simply varying rep ranges for the sake of varying rep ranges. Each day has a specific purpose (ex. maximal strength development).

As mentioned earlier, the conjugate method enables the athlete to simultaneously improve several physical qualities. In theory, one must raise all physical qualities at the same time to maximize performance. Variety is constantly incorporated to avoid adaptation.

The conjugate model is ideal for the development of numerous strength qualities. If you want to get strong, this model surely fits the bill. Westside Barbell is all the proof that you need.



So, does the conjugate model work for fighters?

Yes, if it is properly applied.

Remember, periodization is not an exact science. What works for a powerlifter will not necessarily work for a fighter. Adjustments must be made to satisfy the unique needs of the combat athlete.

Whenever a new “trend” sprouts up in the fitness world, it is only a matter of time before the original theory is misunderstood and improperly applied. While conjugate periodization is far from new (it’s been around for years in the Eastern Bloc), it is largely *new* to most coaches in the Western world.

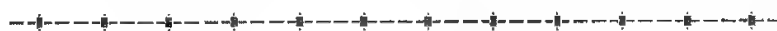
Many coaches misunderstand conjugate periodization to mean *train everything at once*. In essence, these individuals confuse the conjugate system with the concurrent system. The concurrent system involves the “parallel training of several motor abilities, such as strength, speed, and endurance, over the same period, with the intention of producing multifaceted development of physical fitness” (Siff, 2003a).

Many coaches would read this definition and assume it is a definition of the conjugate system.

Nope!

The traditional knock against the concurrent system is that it is effective with novice athletes, yet less effective with elite athletes. Such advanced athletes are thought to require more intense phases of uni-directional loading, which is the purpose of the conjugate system.

The concurrent system can be summarized as one that produces a *jack-of-all-trades, master of none*. The conjugate model is more focused on a specific task, while still allowing for the development of multiple motor abilities.



Clearly, several nonlinear options exist. The background information discussed thus far will enable you to understand the *how* and *why* of developing a combat athlete's training program. No single model is superior in all circumstances.

We will borrow principles from the conjugate model, as well as the concurrent model.

As mentioned, the primary flaw of the concurrent model is that it is not suited for advanced athletes. Unfortunately, those who have made these claims often focus on athletes who compete in less multifaceted contests. For example, a fighter must combine speed, power, and strength, coupled with loads of endurance (anaerobic, aerobic, and muscular). On top of these objectives, the athlete must also make time for skill work such as sparring, one-on-one instruction, and partner drills.

To suggest that the concurrent model is not suitable for *elite athletes* is a misleading statement. The true question that must be answered is what constitutes an *elite athlete*?

Consider a world champion professional boxer. Clearly, this individual should be recognized as an elite athlete. But the elite boxer is far from an elite powerlifter. To become an elite powerlifter, you must train as a powerlifter, which means frequent weight training sessions.

If an elite powerlifter began using the concurrent system, his performance would suffer. The powerlifter does not need the endurance of a fighter. Similarly, a boxer will never be an elite powerlifter. To become an elite strength athlete, you must focus most of your time to strength development. Such a plan is both unrealistic and counterproductive for a competitive fighter. I have never seen a barbell throw a punch!

A boxer could theoretically use a concurrent system of training, considering his novice status in the strength world. The boxer will never be elite in terms of maximal strength. If you were to survey the world champion boxers from any era, you will be hard pressed to find one fighter who could contend with even a novice powerlifter or Olympic weightlifter. Clearly, one can be an *elite athlete* in

one environment (ex. a boxing ring), while a *novice* in another (ex. a powerlifting competition).

The boxer could be a lethal knockout puncher, but that does not mean he is an accomplished strength athlete. As recommended by Zatsiorsky (1995), "don't overemphasize the role of maximal strength in power production. To be a strong athlete does not mean to be a power athlete."

Such intricate details are largely overlooked with general statements such as "the concurrent system is not intended for elite athletes."

Combat athletes must train numerous physical qualities. There are only so many days in a week. A powerlifter has less objectives to target. He has no need for a concurrent system. Many combat athletes, who believe they are following a conjugate system, are in fact also utilizing parts of the concurrent system. There are simply too many training objectives that must be addressed each week. The mere maintenance of so many objectives at one time is concurrent.

As you can see, combat athletes have unique needs when compared to Olympic weightlifters and powerlifters. A trainer who prescribes a powerlifting routine to a fighter does not understand the complex nature of combat athletics.

For example, a 12-round boxer must move around on his legs for 36-minutes (12 x 3-minute rounds). He must be prepared to punch with speed and power, from beginning to end. The physical preparations needed by this athlete are far different from that of a powerlifter.

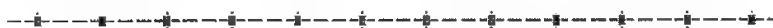
Strength is useless without the ability to apply it through conditioning and skill. Combat athletes cannot dedicate as much time to strength training (when compared to powerlifters and Olympic weightlifters). You will not learn how to fight by lifting the iron. We must use strength training as a supplement to a more complete, well-rounded program.

Furthermore, not all aspects of training can be periodized throughout the year. For example, a powerlifter can train maximal strength each week by employing the conjugate model. A fighter cannot spar at maximal intensity each week. Sparring is physically and mentally draining. One cannot be expected to spar at full speed each week, over the course of an entire year. Such a program would leave the athlete "punched out". There is only so much punishment that your body can (and should) endure. Weekly doses of full contact sparring will lead to injury and overtraining.

HIGHLIGHTS

At this point, let's highlight some important points to consider when designing a combat athlete's training program.

- Sparring should take place according to one's competition schedule. If you have no fights planned, sparring frequency and intensity should be reduced. If a fight is planned for the immediate future (ex. 6 weeks away), sparring intensity should increase. As a fighter, you will learn by doing. You need competitive sparring to sharpen reactions, develop sport-specific conditioning, overcome mental anxiety, and to practice specific tactics that will be used against your opponent.
- Anaerobic conditioning must remain elevated throughout the year. Do not allow conditioning to deteriorate. Anaerobic conditioning should be either targeted or maintained. There is no room for decline. If a fight comes on short notice, you must possess adequate conditioning for higher intensity sparring sessions. A fighter who lets conditioning decline will struggle when competing on short notice. Sparring without proper conditioning can lead to injury, and is detrimental to confidence. A fighter who becomes exhausted during a sparring session (by failing to maintain conditioning) will always question his conditioning on fight night. Do not make this mistake. Stay in shape!
- Strength work will continue throughout the year. Various qualities will be targeted or maintained, such as maximal strength, speed strength, explosive strength, and strength endurance.
- Skill training (ex. partner drills and one-on-one instruction with a coach) should continue throughout the year. The idea of a season should not exist with skill training. Skills must be maintained and improved each week.



As you can see, a fighter must find time for:

- Strength training (ex. speed strength, explosive strength, maximal strength, strength endurance)
- Skill work (ex. sparring, bag work, partner drills)
- Sparring (when a competition is scheduled)
- Anaerobic conditioning

This partial list fails to include additional objectives such as core training, neck training, and more. Even with this partial list, it becomes clear that several qualities must be trained at one time. No matter how the week is divided, you cannot get around the fact that numerous qualities must be trained. This fact alone leaves a *concurrent spin* on the training plan. Principles from the conjugate system can then be applied on top of this model for certain objectives (ex. strength training). So while a conjugate model may exist within part of the overall program, a concurrent overtone will coexist, simply because of the multifaceted nature of combat athletics.

It is not feasible to target only one or two objectives at once. The needs of a fighter are far too complex and demanding.

THE TRAINING PLAN

Let's now look at a sample training plan. Many of the principles from this chapter may seem confusing until you see them applied to an actual program.

The plan will follow a five-day cycle, illustrated below.

A revolving pattern will occur over fifty days. For example, the five-day split will be performed ten times (50 day program).

Day 1	Day 2	Day 3	Day 4	Day 5
Warrior Challenge	Interval Training	Strength Workout	GPP Session	Rest Day
Finisher	Core Training	Finisher	Core Training	Additional Work Optional

Next, we will discuss the specifics of each day.

PROGRAM OVERVIEW

Day 1 – The first day of each 5-day split will require a Warrior Challenge (discussed in the conditioning chapter). These challenges will blend strength and conditioning into one routine.

Five challenges were discussed previously. Each week will require a unique challenge. Over 50 days, each challenge will be performed twice. For example,

The Magic 50 routine will be performed on Day 1 and Day 26. *Work Capacity 101* will be performed on Day 6 and Day 31.

Compete against yourself during each challenge. You should attempt to work as fast (while completing as much work) as possible.

Day 1 will also conclude with a finisher. Once again, the finisher will change from workout to workout. One workout may end with a heavy farmer's walk, while another requires a sandbag carry. The finisher will build mental toughness, as you will already be fatigued from the Warrior Challenge.

If you are training for a specific event (ex. boxing or wrestling), Day 1 should include a lighter skill session. The Warrior Challenges are likely to sap plenty of energy from you. You will need some time to adjust to the intensity of these workouts. Do not attempt too much, too soon. For example, a boxer may limit this day's skill work to shadow boxing and light bag work (ex. double-end bag and speed-bag). As your work capacity improves, you can introduce more activities (ex. focus mitt drills with a trainer).

Day 2 - The second day of each 5-day split is dedicated to interval running. The interval program will vary from week to week, as distance is decreased, with an accompanying increase in intensity.

For example, Day 2 of the 50 day program calls for the following:

1. 4 x 800 meters
2. 4 x 50 meters

4 x 800 meters = four intervals, each consisting of 800 meters. You will run 800 meters, and then rest 60 to 90 seconds before performing the second interval. You will continue until four intervals are completed (total distance = 3200 meters).

Upon completing the 800 meter intervals, you will finish with 4 x 50 meter sprints. Sprint 50 meters, jog back to the starting line, and continue until four sprints are completed (total distance = 200 meters).

Day 2 will also require a dedicated core training workout. This workout does not need to be performed at the same time as the interval workout. For example, you could run intervals in the morning, and then perform the core routine later in the evening (or vice versa).

Day 2 and Day 4 are ideal for additional skill related activities. For example, a sample Day 2 session could include:

Morning: Interval training protocol

Afternoon: Sport-specific training workout (ex. heavy bag work, partner drills)

The sport-specific training session could then end with a core workout.

Day 2 and Day 4 could also be used for isometrics. For example, rather than performing the sport-specific workout, you could perform an isometric strength workout. Another option would be to combine isometrics with the power punching drills discussed previously. Ultimately, your training goals will dictate your added workload.

Clearly, several options exist. At first glance, it may seem like “too much work”, but you will be surprised at how fast your work capacity improves by sticking with this style of training.

Most competitive fighters train twice a day. The morning begins with roadwork, with the evenings dedicated to sport-specific training. Not all athletes will train twice a day. Surely, you can perform one workout each day with tremendous results. Ultimately, you must determine the ideal program for your unique schedule. We all have unique needs and responsibilities (ex. family, school, work).

Choose a system that suits your goals and personal lifestyle.

Day 3 – The third day of each 5-day split is dedicated to strength training. Strength workouts will rotate between heavier loads (maximal strength) and more explosive work (speed strength and explosive strength).

Every 5th five-day cycle will include a *back-off* strength session. For example, Day 3, 8, 13, and 18 will include more strenuous work. Day 23 will be less intense, putting less strain on the central nervous system.

Research has shown that three or four week blocks are ideal for strength development. The last week is typically used as a restoration period. Periods of less intense work are prescribed to facilitate recovery and growth. Continuous increases in loading are associated with tissue stress and breakdown. Making time for an occasional back-off session will promote recovery and restoration (Siff, 2003a).

It is important to understand that you will not experience your best performance during a period of strenuous training. You will need a period of less intense exercise to realize the effects of the previous (intense) sessions. The positive adaptation to the strenuous work occurs during the period of unloading, not during the intense training session (Zatsiorsky, 1995).

In essence, you cannot add weight each week. One must include time for restoration to avoid burnout.

Moreover, the importance of the back-off week is not limited to your monthly strength training program. This concept should also be applied to your competition schedule. Many athletes make the mistake of lifting too heavy, too close to a competition. Consequently, these individuals leave their strength in the gym. What good is strength, if you cannot bring it to the competition?

Verkhoshansky makes reference to one study where speed strength increased by an average of 18 to 25% following a 10-day rest from intense specialized strength training. Such increases may occur due to a super-compensatory restoration period that follows strength work.

This super-compensatory phenomenon is largely the goal of the conjugate strength model. The conjugate sequence is based on the exploitation of a delayed training effect. This effect occurs during a diminished loading and restorative period. In essence, the body "*super-compensates*" when given the opportunity to restore following the intense loading phase (Siff, 2003a).

As you can see, it does not make sense to continually go heavier, and heavier, and heavier. Time must be made for diminished loading, so one can realize the true benefits of the intense loading period. Continual increases in weight, with no time for restoration will surely lead to overtraining and burnout. The long-term training curve should travel upward, with regular back-off periods to foster restoration.

Our 50 day program will conform to this ideology, incorporating a back-off session on every 5th cycle (cycle = 5 days).

Typically, sport-specific training on Day 3 should be light, similar to Day 1. Individual work capacity will dictate your ability to include additional activities.

Day 4 - The fourth day of each 5-day split is dedicated to various GPP drills. The drills provided on pages 150-153 will be used throughout the program. These drills will serve two primary purposes. First, they will dramatically

improve work capacity and mental toughness. These drills will also promote restoration from the prior day's (Day 3) strength session.

Day 4 will also require a dedicated core training workout. This workout does not need to be performed at the same time as the GPP workout. For example, you could perform GPP drills in the morning, and then perform the core routine later in the evening.

I recommend starting the day with GPP to help foster recovery from the prior day's strength session. You can then devote the afternoon to core training and possibly sport-specific work.

Day 5 - The fifth day of each 5-day split is reserved for rest. If you choose to exercise, limit the intensity of your training session. Low intensity workout examples include aerobic running and shadow boxing.

Personally, I do not take a rest day every five days. While testing this program, I would typically include a light workout on Day 5 (ex. calisthenics and light bag work).

I would rest after 9 days of exercise (ex. every other Day 5). On the *rest day*, I would still maintain an active lifestyle however (ex. take my dogs for a long walk or play basketball at the park). I do not believe in sitting around on the couch. I prefer to live my life to the fullest.

Do not simply follow my lead however. Listen to your body and find time for rest. Too much work can be as bad as not enough work. If your body is asking for rest, you must follow its advice. The body is the ultimate feedback mechanism.

Listen to your body.

Pages 222 and 223 provide a template of the sample 50 day program.

DAY 1 THROUGH DAY 25

Day 1	Day 2	Day 3	Day 4	Day 5
The Magic 50	Interval Training 4 x 800m 4 x 50m	Strength Workout #1	GPP Workout #1	Rest Day
<u>Finisher</u> Farmer's Walk 3 sets	Core Training #1	<u>Finisher</u> Sledgehammer 100 swings	Core Training #2	
Day 6	Day 7	Day 8	Day 9	Day 10
Work Capacity 101	Interval Training 6 x 400m 5 x 50m	Strength Workout #2	GPP Workout #2	Rest Day
<u>Finisher</u> Sandbag Carry 1 set	Core Training #3	<u>Finisher</u> Dumbbell Swings 3 sets of 15	Core Training #4	
Day 11	Day 12	Day 13	Day 14	Day 15
Density Day	Interval Training 8 x 200m 5 x 50m	Strength Workout #3	GPP Workout #3	Rest Day
<u>Finisher</u> No Finisher	Core Training #5	<u>Finisher</u> Farmer's Walk 3 sets	Core Training #6	
Day 16	Day 17	Day 18	Day 19	Day 20
Sweet 16	Interval Training 10 x 100m 5 x 50m	Strength Workout #4	GPP Workout #4	Rest Day
<u>Finisher</u> Sandbag Carry 1 set	Core Training #7	<u>Finisher</u> Double Swings 3 sets of 15	Core Training #8	
Day 21	Day 22	Day 23	Day 24	Day 25
Fast And Furious	Interval Training 20 x 50m	Back-Off Strength Workout	GPP Workout #5	Rest Day
<u>Finisher</u> No Finisher	Core Training #9	<u>Finisher</u> 1-mile run	Core Training #10	

DAY 26 THROUGH DAY 50

Day 26	Day 27	Day 28	Day 29	Day 30
The Magic 50	Interval Training 4 x 800m 4 x 50m	Strength Workout #5	GPP Workout #1	Rest Day
<u>Finisher</u> Farmer's Walk 3 sets	Core Training #1	<u>Finisher</u> Sledgehammer 100 swings	Core Training #2	
Day 31	Day 32	Day 33	Day 34	Day 35
Work Capacity 101	Interval Training 6 x 400m 5 x 50m	Strength Workout #6	GPP Workout #2	Rest Day
<u>Finisher</u> Sandbag Carry 1 set	Core Training #3	<u>Finisher</u> Dumbbell Swings 3 sets of 15	Core Training #4	
Day 36	Day 37	Day 38	Day 39	Day 40
Density Day	Interval Training 8 x 200m 5 x 50m	Strength Workout #7	GPP Workout #3	Rest Day
<u>Finisher</u> No Finisher	Core Training #5	<u>Finisher</u> Sandbag Carry 1 set	Core Training #6	
Day 41	Day 42	Day 43	Day 44	Day 45
Sweet 16	Interval Training 10 x 100m 5 x 50m	Strength Workout #8	GPP Workout #4	Rest Day
<u>Finisher</u> Farmer's Walk 3 sets	Core Training #7	<u>Finisher</u> Double Swings 3 sets of 15	Core Training #8	
Day 46	Day 47	Day 48	Day 49	Day 50
Fast And Furious	Interval Training 20 x 50m	Back-Off Strength Workout	GPP Workout #5	Rest Day
<u>Finisher</u> No Finisher	Core Training #9	<u>Finisher</u> 1-mile run	Core Training #10	

On the pages that follow, I have provided notes regarding the program.

FINISHER WORKOUTS

Day 1, 13, 26, 41 = Farmer's Walk

Perform three sets of the Farmer's Walk with a heavy pair of dumbbells. Continue with each set until you are just short of failure (about to drop the dumbbells). Rest 1-minute and continue until all three sets are complete.

Day 6, 16, 31, 38 = Sandbag Carry

Perform one set of the Sandbag Carry. You should begin with the bear hug stance. If the bag becomes "unbearable", you can throw it over one shoulder. Alternate your grip to maximize the duration of the carry. You should be able to carry the sandbag longer than you are able to endure the Farmer's Walk with heavy dumbbells. For this reason, you will only perform one set of the Sandbag Carry. When you can carry the bag for 10 minutes, it is time to increase the weight or engage in a more difficult carrying style (ex. overhead).

Day 11, 21, 36, 46 = No finisher

Day 11 and Day 36 will require the Density Day challenge. There will be no finisher on these days. The density workout includes its own finisher.

Day 21 and 46 will occur during the back-off week. An intense challenge will be performed (Fast and Furious), so there is no need for a heavy finisher.

Day 3, 18, 28, 43 = Sledgehammer Swings

Swing a sledgehammer for 100 reps. Alternate your grip every 5 swings. For example, begin with the left foot slightly forward, with the right hand on top of the left hand, swinging downward. Swing the hammer 5 times. After 5 swings, place your left hand on top of the right hand, with the right foot slightly forward. Swing 5 more times and continue to change your grip every 5 swings. Perform 100 swings as fast as possible. If 100 swings do not pose a challenge, kick it up to 200 swings. Another option is to perform as many swings as possible in a 5 or 10-minute block.

You can swing the sledgehammer into a large tire as illustrated on page 154. If you do not have access to an old tire, you can use a sand pit.

Day 8, 33 = Dumbbell Swings

Perform 3 sets of Dumbbell Swings per arm (15 repetitions per set). Do not rest between the right arm and left arm sequence.

For example, swing the dumbbell for 15 reps with the left arm, then 15 reps with the right arm. Rest 30 to 60 seconds, before proceeding with the second set. Continue with this pattern until all three sets are completed.

Day 18, 43 = Double Dumbbell Swings

Perform 3 sets of Double Dumbbell Swings (15 repetitions per set).

Rest 30 to 60 seconds, before proceeding with the second set. Continue until all three sets are completed.

Day 23, 48 = 1 Mile Run

Run 1-mile for time. Finish the mile as fast as possible.



INTERVAL WORKOUTS

Rest periods between interval sessions are listed below:

- 400 and 800 meter intervals = 60 to 90 seconds of rest between intervals
- 200 meter intervals = 30 to 60 seconds of rest between intervals
- 50 and 100 meter intervals = jog back to the starting line and continue

During distances of 200, 400, and 800 meters, you should walk during the rest period. Do not remain stationary during the 60 to 90 seconds of rest.

For example: a 4 x 800 meter session would include:

1. Run 800 meters
 - a. Walk for 60 to 90 seconds (active rest)
2. Run 800 meters
 - a. Walk for 60 to 90 seconds (active rest)

Continue until all four intervals are complete.

During distances of 50 and 100 meters, you will take a slow jog back to the starting line as a means of active rest. This style of training is commonly referred to as *wind sprints*.

For example, a 10 x 100 meter session would include:

1. Run 100 meters
 - a. Lightly jog back to the starting line
2. As soon as you return to the starting line, run 100 meters
 - a. Lightly jog back to the starting line

Continue until all 10 sprints are complete.

When a workout involves two distances (ex. Day 2 starts with 4 x 800m, and finishes with 4 x 50m), you should rest 60 to 120 seconds between the two distances.

For example, on Day 2, you will rest approximately 60 to 120 seconds between your last 800 meter interval and the first 50 meter sprint. During the rest period, you should be walking. Do not sit down.

Alternative - You can replace any interval session with a hill sprinting workout (see pages 128-129).



CORE TRAINING WORKOUTS

On the pages that follow, I will list each day's core training routine. First however, I have provided some general notes that will apply to these workouts.

Core Workout Notes:

1. Perform these workouts as a circuit (one exercise after the other). For example, on Day 2, you will start with one set of the flag. Next, you will continue with the second exercise (side bends). You will work your way down the entire list. At the end of the circuit, you will rest 1 to 2 minutes, and perform another entire circuit. Rest between exercises should range from 30 to 60 seconds, depending on the exercise and your fitness level. If you need more or less rest, make adjustments based on your personal needs.

2. Many workouts include instructions to perform 3 to 5 circuits. The total number of circuits performed will depend on factors such as:
 - a. **Time** – If time is limited, you may not be able to perform 5 complete circuits. You could instead add weight to certain movements to increase difficulty.
 - b. **Difficulty** – Certain circuits are more strenuous than others. If you are wiped out after 2 or 3 circuits, there is no need to continue. There is no shame in starting with one or two circuits. The number of circuits and repetition listings are mere guidelines. Make adjustments to satisfy your personal needs and abilities.
3. Certain workouts include a core finisher such as: *Finish with the Plank hold for time**. The asterisk is included to note that you can instead perform a more difficult static finisher. Two options include the extended arm pushup hold and the alternating one-arm extended arm pushup hold. Choose a finishing move that suits your fitness level. For example, if you are able to hold the plank for several minutes, you may wish to perform a more difficult variation. You could alternate between left and right one-arm extended arm pushup holds. Alternate hands every 5 seconds **without** touching the ground between repetitions. The finisher will only be performed **once**. You will first complete 3 to 5 circuits of the core workout, **and then** end with one set of the finishing hold.
4. Certain workouts list the following rep range for chinnies: *High rep set of Chinnies*. For this exercise sequence, you will simply perform a brisk paced set of chinnies until you feel a nice burn throughout the abdominal wall. Work through the set until you achieve this feeling.
5. On Day 9 and Day 34, the following exercise is listed: *Crunches (high tension) x 10 (+ 5 second pause per rep)*. You will slowly perform a traditional abdominal crunch, focusing on maximally tensing the abdominal wall throughout the movement. Upon reaching the uppermost point of the movement, pause for five seconds, still focusing on maximal contraction.
6. On Days 22, 24, 47, and 49, you will not perform any weighted abdominal exercise. These days fall during the two back-off cycles included in the 50 day plan. During these workouts, you will still achieve a quality core workout, simply without added resistance. You will give the CNS a rest during these back-off periods.

7. Day 17 and Day 42 list the following exercise sequence: *V-ups x 10 + Knee Hugs x 10 + V-ups x 5 + Knee Hugs x 5*. To perform this instruction, you will simply perform each exercise in succession without rest. For example, start with V-ups x 10 reps, then immediately transition into knee-hugs x 10 reps, then V-ups x 5 reps, and finally knee hugs x 5 reps. There is no rest between these four sets of exercise. The legs do not touch the ground until all four exercises are completed.
8. Day 19 and Day 44 include two distinct circuits. I have labeled the circuits Sequence 1 and Sequence 2. You will perform four total circuits (two of each sequence). For example, you will start with Sequence 1, rest 1 to 2 minutes, and then continue with Sequence 2. Rest another 1 to 2 minutes and repeat each sequence one more time.

Let's now look at the individual workouts:

CORE TRAINING #1 (DAY 2, DAY 27)

- The Flag x 5
- Side Bends x 6 per side
- Supermans x 15
- Medicine Ball Twist Throws x 16 (8 per side)
- Repeat this circuit 3 to 5 times

Finish with the Plank hold for time*

CORE TRAINING #2 (DAY 4, DAY 29)

- Standing Wheel Rollouts x 5
- V-ups x 15
- Russian Twists x 10 per side
- Back Extensions x 12
- High rep set of Chinnies

Repeat this circuit 3 to 5 times

CORE TRAINING #3 (DAY 7, DAY 32)

- Turkish Get-up x 5 per side
- Deadlift Twist x 6 per side
- V-ups x 15
- Repeat this circuit 3 to 5 times

Finish with the Plank hold for time*

CORE TRAINING #4 (DAY 9, DAY 34)

- Standing Wheel Rollouts x 5
- Russian Twists x 10 per side
- Crunches (high tension) x 10 (+ 5 second pause per rep)
- Back Extensions x 12
- High rep set of Chinnies
- Repeat this circuit 3 to 5 times

CORE TRAINING #5 (DAY 12, DAY 37)

- The Flag x 5
- Deadlift Twist x 6 per side
- Supermans x 15
- Dumbbell Twists x 8 per side
- Repeat this circuit 3 to 5 times

Finish with the Plank hold for time*

CORE TRAINING #6 (DAY 14, DAY 39)

- Standing Wheel Rollouts x 5
- Side Bends x 6 per side
- Back Extensions x 12
- Russian Twists x 10 per side
- High rep set of Chinnies
- Repeat this circuit 3 to 5 times

CORE TRAINING #7 (DAY 17, DAY 42)

- Turkish Get-up x 5 per side
- Saxon Side Bends x 6 per side
- V-ups x 10 + Knee Hugs x 10 + V-ups x 5 + Knee Hugs x 5
- Repeat this circuit 3 to 5 times

Finish with Plank hold for time*

CORE TRAINING #8 (DAY 19, DAY 44)

Sequence 1

- Standing Wheel Rollouts x 5
- Russian Twists x 10 per side
- V-ups x 15
- Back Extensions x 12
- High rep set of Chinnies

Sequence 2

- The Flag x 5
- Russian Twists x 10 per side
- V-ups x 15
- Back Extensions x 12
- High rep set of Chinnies

Each sequence is performed twice

CORE TRAINING #9 (DAY 22, DAY 47)

- Standing Wheel Rollout x 5
- V-ups x 15
- Supermans x 15
- Side Crunch x 15 per side (slow cadence)
- High rep set of Chinnies
- Repeat this circuit 3 to 5 times

Finish with the Plank hold for time*

CORE TRAINING #10 (DAY 24, DAY 49)

- The Flag x 5
- Knee Hugs x 25
- Supermans x 15
- Side Crunch x 15 per side (slow cadence)
- High rep set of Chinnies
- Repeat this circuit 3 to 5 times

Finish with the Plank hold for time*



STRENGTH TRAINING WORKOUTS

Strength Training Notes:

1. Heavier loads will be lifted during Strength Workouts 1, 3, 5 and 7 (Days 3, 13, 28, and 38). Explosive strength and speed strength will be targeted in Strength Workouts 2, 4, 6, and 8 (Days 8, 18, 33, and 43). Back-off strength workouts will be performed on Day 23 and 48, utilizing bodyweight exercises such as handstand pushups.
2. During Strength Workouts 1, 3, 5, and 7, you will lift heavy loads. For example, Strength Workout #1 lists a one-arm clean and press as the first exercise. This workout calls for 3 reps of this exercise per arm. The load for this movement is listed as your 5-repetition maximum. You will choose a weight that you can perform for approximately 5-repetitions before failing. You will only perform 3 reps however. You will stop short of failure, leaving the final two repetitions *in the hole*. Rest between these movements will be moderate (90 to 120 seconds between sets).

3. Certain workouts group two exercises together as a mini-circuit. For example, during Strength Workout #1, you will group the weighted one-legged squat with a glute-ham raise. The notation C1 represents the first movement (weighted one-legged squats). The notation C2 represents the second movement (glute-ham raise). You will perform C1, rest approximately 45 to 60 seconds, and then perform C2. You will rest another 45 to 60 seconds and continue with another pass through the mini-circuit (returning to C1). Exercises have been grouped in this fashion to facilitate shorter rest periods between individual exercises.
4. Strength Workouts 2, 4, 6, and 8 focus on explosive strength and speed strength development, via Zatsiorsky's dynamic effort. As mentioned earlier, examples of dynamic effort training include lifting sub-maximal weights at top speed, along with plyometrics and complex training drills. Use of the dynamic effort has been made famous by the Westside Barbell Club, who commonly perform 8 sets of 3 reps, using loads that are approximately 50 to 60% of the one repetition maximum. We will use 5 sets of 3 reps, for two different exercises. One exercise will involve a 2-hand snatch movement, while the other involves an overhead push press or push jerk. We will use 55 to 60% of the one-rep maximum on push press movements, while using 60 to 70% of the one-rep maximum on snatch and push jerk movements. Even with heavier loads, the snatch and push jerk movements remain explosive and fast. Rest between these movements will be brief (45 to 60 seconds between sets).
 - a. The Dumbbell Split Snatch (**front variation**) is illustrated on the **TOP** of page 32.
 - b. The Dumbbell Split Snatch (**side variation**) is illustrated on the **BOTTOM** of page 32.
5. Strength Workouts 2 and 6 include a **Wall Squat**, held for 60 seconds. Focus on **maximally** contracting the legs during this time.
6. *Italics* identify complex training pairs during Strength Workouts 2, 4, 6, and 8. During *complex pairs*, there is no rest between exercises. You will then rest 60 to 120 seconds before completing the next complex pair. For example, you will perform one set of one-arm pushups with the right arm, and then immediately continue with 5 dumbbell shot put throws (no rest between movements). You will then continue with 5 one-arm pushups with the left arm, and then 5 dumbbell shot put throws with the left arm. You will then rest 60 to 120 seconds, before continuing to **the 2nd complex pair**. Two complex pairs are present during each explosive strength workout. Complexes are grouped with brackets, as shown on page 232.

COMPLEX PAIR SAMPLE:

B1. One Arm Bench Press

- Sets: 4
- Reps: 5 per arm
- Load: 8-rep maximum

B2. Depth Plyometric Pushups

- Sets: 4
- Reps: 8

Rest between complex pair: 60 to 120 seconds

C1. Wall Squat

- Sets: 4
- Reps: 60 second static hold
- Load: Maximum tension

C2. Squat Jumps

- Sets: 4
- Reps: 10

Rest between complex pair: 60 to 120 seconds

B1 and B2 are a pair. There is no rest between these two movements. C1 and C2 are also a pair. There is no rest between these movements. A period of rest occurs between B2 and C1, and then C2 and B1.

For example, you will perform B1 and then B2 without rest. You will then rest 60 to 120 seconds, before continuing to the second complex pair. Upon resting, you will perform C1 and C2, and then rest another 60 to 120 seconds before returning to B1. You will perform each pair four times.

The reason for such an arrangement is to allow better recovery between sets. While you are resting from the upper body pair (ex. one-arm bench press and depth plyometric pushups), you will be training the lower body. This method of sequencing is time efficient and effective.



Let's now proceed to the actual workouts.

STRENGTH WORKOUT #1 (DAY 3)

A. 1-Arm Dumbbell Clean and Press (from floor)

- Sets: 4
- Reps: 3 per arm
- Rest between sets: 90 to 120 seconds
- Load: 5-rep max weight

B. 1-Arm Snatch

- Sets: 4
- Reps: 4 per arm
- Rest between sets: 90 to 120 seconds
- Load: 5-rep max weight

C1. Weighted One-Legged Squat

C2. Glute-Ham Raise

- Sets: 4
- Reps: 5
- Rest between sets: 45 to 60 seconds

D1. Weighted Pull-ups

D2. Weighted Pushups

- Sets: 4
- Reps: Pull-ups = 5, Pushups = 15
- Rest between sets: 45 to 60 seconds

Finisher

Sledgehammer

100 swings

STRENGTH WORKOUT #2 (DAY 8)

A. 2-Dumbbell Split Snatch (front variation)

- Sets: 5
- Reps: 3
- Rest between sets: 45 to 60 seconds
- Load: 60% to 65% of 1-rep maximum

B. 2-Dumbbell Push Press

- Sets: 5
- Reps: 3
- Rest between sets: 45 to 60 seconds
- Load: 55% to 60% of 1-rep maximum

B1. One Arm Bench Press

- Sets: 4
- Reps: 5 per arm
- Load: 8-rep maximum

B2. Depth Plyometric Pushups

- Sets: 4
- Reps: 8

Rest between complex pair: 60 to 120 seconds

C1. Wall Squat

- Sets: 4
- Reps: 60 second static hold
- Load: Maximum tension

C2. Squat Jumps

- Sets: 4
- Reps: 10

Rest between complex pair: 60 to 120 seconds

Finisher

Dumbbell Swings

3 x 15 reps per arm

STRENGTH WORKOUT #3 (DAY 13)

A. 1-Dumbbell Push Press

- Sets: 4
- Reps: 4 per arm
- Rest between sets: 90 to 120 seconds
- Load: 5-rep max weight

B. Sandbag Shouldering

- Sets: 4
- Reps: 8 (4 per side)
- Rest between sets: 90 to 120 seconds
- Load: 6-rep (per side) max weight

C1. Dumbbell Step-ups

C2. RDL's

- Sets: 4
- Reps: Step-ups = 6 per leg, RDL's = 8
- Rest between sets: 45 to 60 seconds

D1. Weighted Pull-ups

D2. Weighted Dips

- Sets: 4
- Reps: Pull-ups = 5, Dips = 10
- Rest between sets: 45 to 60 seconds

Finisher

Farmer's Walk

3 sets

STRENGTH WORKOUT #4 (DAY 18)

A. 2-Dumbbell Split Snatch (side variation)

- Sets: 5
- Reps: 3
- Rest between sets: 45 to 60 seconds
- Load: 60% to 65% of 1-rep maximum

B. 2-Dumbbell Push Press

- Sets: 5
- Reps: 3
- Rest between sets: 45 to 60 seconds
- Load: 55% to 60% of 1-rep maximum

B1. One-Arm Pushup

- Sets: 4
- Reps: 5 per arm

B2. Dumbbell Shot put

- Sets: 4
- Reps: 5 per arm

Rest between complex pair: 60 to 120 seconds

C1. Dumbbell Lunges

- Sets: 4
- Reps: 5 per leg
- Load: 8-rep max weight (per leg)

C2. Lunge Jumps

- Sets: 4
- Reps: 10 (5 per side)

Rest between complex pair: 60 to 120 seconds

Finisher

Double Dumbbell Swings

3 x 15 reps

STRENGTH WORKOUT #5 (DAY 28)

A. 2-Dumbbell Push Press

- Sets: 4
- Reps: 3
- Rest between sets: 90 to 120 seconds
- Load: 4-rep max weight

B. 1-Arm Snatch

- Sets: 4
- Reps: 3 per arm
- Rest between sets: 90 to 120 seconds
- Load: 4-rep max weight

C1. Weighted One-Legged Squat

C2. Glute-Ham Raise

- Sets: 4
- Reps: 5
- Rest between sets: 45 to 60 seconds

D1. Weighted Pull-ups

D2. Weighted Pushups

- Sets: 4
- Reps: Pull-ups = 5, Pushups = 15
- Rest between sets: 45 to 60 seconds

Finisher

Sledgehammer

100 swings

STRENGTH WORKOUT #6 (DAY 33)

A. 2-Dumbbell Split Snatch (front variation)

- Sets: 5
- Reps: 3
- Rest between sets: 45 to 60 seconds
- Load: 65% to 70% of 1-rep maximum

B. 2-Dumbbell Push Jerk

- Sets: 5
- Reps: 3
- Rest between sets: 45 to 60 seconds
- Load: 65% to 70% of 1-rep maximum

B1. One Arm Bench Press

- Sets: 4
- Reps: 5
- Load: 8-rep maximum

B2. Depth Plyometric Pushups

- Sets: 4
- Reps: 8 reps

Rest between complex pair: 60 to 120 seconds

C1. Wall Squat

- Sets: 4
- Reps: 60 second static hold
- Load: Maximum tension

C2. Squat Jumps

- Sets: 4
- Reps: 10

Rest between complex pair: 60 to 120 seconds

Finisher

Dumbbell Swings

3 x 15 reps per arm

STRENGTH WORKOUT #7 (DAY 38)

A. 1-Arm Dumbbell Clean and Press (from floor)

- Sets: 4
- Reps: 3 per arm
- Rest between sets: 90 to 120 seconds
- Load: 4-rep max weight

B. Sandbag Shouldering

- Sets: 4
- Reps: 8 (4 per side)
- Rest between sets: 90 to 120 seconds
- Load: 6-rep (per side) max weight

C1. Dumbbell Step-ups

C2. RDL's

- Sets: 4
- Reps: Step-ups = 6 per leg, RDL's = 8
- Rest between sets: 45 to 60 seconds

D1. Weighted Pull-ups

D2. Weighted Dips

- Sets: 4
- Reps: Pull-ups = 5, Dips = 10
- Rest between sets: 45 to 60 seconds

Finisher

Sandbag Carry

1 set

STRENGTH WORKOUT #8 (DAY 43)

A. 2-Dumbbell Split Snatch (side variation)

- Sets: 5
- Reps: 3
- Rest between sets: 45 to 60 seconds
- Load: 65% to 70% of 1-rep maximum

B. 2-Dumbbell Push Jerk

- Sets: 5
- Reps: 3
- Rest between sets: 45 to 60 seconds
- Load: 65% to 70% of 1-rep maximum

B1. One-Arm Pushup

- Sets: 4
- Reps: 5 per arm

B2. Dumbbell Shot put

- Sets: 4
- Reps: 5 per arm

Rest between complex pair: 60 to 120 seconds

C1. Dumbbell Lunges

- Sets: 4
- Reps: 5 per leg
- Load: 8-rep max weight (per leg)

C2. Lunge Jumps

- Sets: 4
- Reps: 10 (5 per side)

Rest between complex pair: 60 to 120 seconds

Finisher

Double Dumbbell Swings

3 x 15 reps

BACK-OFF STRENGTH WORKOUT (DAY 23 & 48)

1. Handstand Pushups
2. Pull-ups
3. One-Legged Squats
4. One-Arm Pushups
5. Glute-Ham Raise
6. Bodyweight Triceps Extensions

- Sets: Repeat circuit 4 times
- Reps: Stop 2 to 3 reps short of failure on each exercise
- Rest: Rest 30 to 60 seconds between exercises, rest 1 to 2 minutes between circuits

Workout Notes:

1. Perform handstand pushups between blocks if possible.
2. Add weight to the one-legged squat if possible.
3. Perform a different pull-up/chin-up variation during each circuit.
 - a. You could also substitute muscle-ups or rope climbing for pull-ups.
4. Perform more challenging one-arm pushup variations if possible (Ex. one-arm divebomber).



QUESTIONS AND ANSWERS

Let's now review some common questions that you may have about this training program.

First, you may be looking over the strength program, wondering why such a limited number of exercises have been included.

What about the other movements listed throughout the book?

This is a legitimate question, which is easily answered. There are only so many days in a week. We cannot train with every exercise during each week. Rather, one must cycle the use of various movements over different training phases. This program is just one of many options. It is certainly not the only option available to you.

When designing a training program, it is useful to imagine yourself going on vacation. What do you do when you leave for vacation? I am guessing that you will go through your clothes and pack a suitcase. You may have an entire closet filled with nice clothes, but you can only bring so many outfits for a 7-day vacation. You need to select a nice collection of clothes (exercises) from your closet (exercise pool).

Your training program is similar. You cannot perform every exercise. Rather, you must pick from several quality movements. Just as you would not wear the same clothes every day, you will not perform the same movements every week. You will cycle different movements over the course of the year.

The strength workouts seem brief. I thought you had to lift for 2 hours to achieve a quality workout?

The strength workouts detailed throughout the sample program emphasize quality over quantity. Rarely will you need more than 1-hour to perform a quality strength workout.

These workouts will leave plenty of time to target additional objectives. For example, you could close one strength workout with a mini-workout consisting of hand and neck training.

Another option would be to perform the strength workout at one time during the day (ex. morning) and then find time for a sport-specific workout at another time (ex. evening).

Lengthy strength workouts will leave you drained. If a strength workout leaves you sore for three days, it is not helping your development as a fighter. Strength workouts must not interfere with skill and conditioning sessions.

Do fighters need to train twice a day?

There is no single answer to this question. Several factors must be considered when creating a training program. The workouts contained within this manual are fairly brief. There will be time for extra training if you wish (and if your work capacity allows it).

By simply adding a mini-workout to the day, you will essentially be training twice per day, although each session may be very brief.

Do not worry about the length of your workout. Quality and intensity are superior measurements. One workout can surely provide adequate quality and intensity.

Advanced athletes may need more. This decision must be made at the individual level.

As stated earlier, Day 2 and Day 4 are ideal for additional sport-specific activities. If you are not training for a specific event, you could instead add a mini-isometric workout on these days.

Ultimately, you must find what works for you, both in terms of your schedule and your physical abilities (and needs).

Is there any way that I can train with this program, but increase the number of strength training workouts per week?

You certainly *can* increase the number of strength workouts, just be sure that it makes sense per your specific objectives. Also, please note that although the sample program only includes one pure strength workout every five days, you will train with weights on several days. For example, many of the Warrior Challenges blend strength work with conditioning. In addition, many of the core workouts include weighted resistance.

In essence, you may be training with weights during all four workout sessions. Day 1 may include a Warrior Challenge with weights (ex. The Magic 50), Day 2 and 4 may include weighted core movements (ex. Turkish Get-ups), and Day 3 will require the dedicated strength workout.

If you want to add another strength session, you could employ the following adjustment to the program.

Sample 6-Day Split Program

- Day 1 = Strength Workout (Maximal Weights)
- Day 2 = GPP + Core Training
- Day 3 = Warrior Challenge
- Day 4 = Interval Training + Core Training
- Day 5 = Strength Workout (Explosive Strength / Speed Strength)
- Day 6 = Rest

For this program, Day 2, 3, and 4 will follow Day 4, 1, and 2 of the previously listed 50 day program (Day 2 = Day 4 of the original program, Day 3 = Day 1 of the original program, Day 4 = Day 2 of the original program).

Day 1 will require heavy weight lifting. You can cycle the use of Strength Workouts 1, 3, 5, and 7 listed earlier in this chapter. Day 5 will target explosive strength and speed strength. For these workouts, you can cycle through Strength Workouts 2, 4, 6, and 8.

After 4 trips through this 6-day cycle, you can perform a back-off week, where you would replace Day 1 and Day 5 with the Back-Off Strength Workout from page 241.

For example:

Day 1	Day 2	Day 3	Day 4	Day 5
Strength Workout 1,3,5,7	Interval Training	Warrior Challenge	GPP Session	Strength Workout 2,4,6,8
Finisher	Core Training		Core Training	Finisher

Day 6 = Rest day

A 30-day program, consisting of 5 cycles, (each cycle = 5 days of training, 1 rest day) would include:

- Cycle 1 = Strength Workout 1 on Day 1 and Strength Workout 2 on Day 5
- Cycle 2 = Strength Workout 3 on Day 1 and Strength Workout 4 on Day 5
- Cycle 3 = Strength Workout 5 on Day 1 and Strength Workout 6 on Day 5
- Cycle 4 = Strength Workout 7 on Day 1 and Strength Workout 8 on Day 5
- Cycle 5 = Back-off Strength Workout on Day 1 and Day 5

The additional training days (Day 2, 3, and 4) would follow the workouts from the 50 day program. For example, during Cycle 1, you will perform the first Warrior Challenge (The Magic 50) on Day 3.

Clearly, this is just one of many options. By incorporating an additional strength workout, you will have less time for sport-specific skill work and conditioning.



Let's now review some additional questions about the program.

Is it possible to gain mass with this program?

Gaining weight is largely a byproduct of food consumption. If you eat more, you will gain mass. Unfortunately, many athletes try to gain too much mass too soon. If you wish to add some size, you must be patient. You must gradually increase quality food consumption. You should also minimize aerobic training.

If you try to gain weight too fast, you will either gain body fat or suffer from many of the problems discussed earlier (ex. tendons and ligaments will not keep pace with gains in mass).

Patience is a virtue.

Are the conditioning drills really necessary? I've been told that sparring is the best way to prepare for a bout.

Although I agree that sparring is critical, it is only one aspect of training. Too much time spent sparring will surely lead to burnout over the long haul.

There is only so much time that you can dedicate to sparring. You should use strength and conditioning workouts to enhance the physical and mental qualities needed for success.

Research has shown that using sport alone to develop proficiency is less effective than an integrated system of sport and supplementary training (Siff, 2003a).

When considering the importance of sparring, it is useful to fall back on the old phrase that "too much of a good thing can become a bad thing."

Find time for supplementary training if you plan to succeed.

Should I lift weights during the week of my fight?

Many fighters make the mistake of lifting too heavy, too close to a competition. Strength is useless if you cannot bring it with you on fight night. The body needs time to recover and super-compensate for a competition.

As mentioned earlier, a super-compensatory restoration period occurs during a time of decreased loading. This period should occur before a major competition. I recommend steering clear of the weight room for at least 7 days before fighting.

Your final week should allow for super-compensatory restoration. At this point, the hard work in the gym is over. Now, you must rest and restore the body to facilitate optimum performance.

Many athletes train too hard in the final days before a fight. These fighters allow their mind to interfere with proper preparation. Rather than relaxing, these athletes become nervous about the upcoming competition, and work off the nervous energy by training. Do not make this mistake.

The best thing that a fighter can do in the final days is relax (the body and mind). You will not get in better shape by training hard in the final days before a fight. All that you will do is sap away vital energy that will be required on fight night.

Keep the final week relaxed with low-impact or non-impact exercises (ex. shadow boxing). Bring your strength and energy to the fight. No one cares how much weight you can move in the gym if you are out of gas on fight night.

I compete with three 5-minute rounds. Do you have any circuits that I can use to train for this type of event?

The shorter circuits from this program (ex. Warrior Challenges) are excellent for your competition. The intense pace of the routines is useful for any combat athlete.

If you would like to include some longer circuits, consider one of the workouts below. You could perform one of these workouts on a Warrior Challenge day.

Workout #1

1. Sandbag Shouldering x 1-minute
2. Sledgehammer Swinging x 1-minute
3. Lunges (bodyweight) x 1-minute
4. Pushups x 1-minute
5. Sandbag Carry x 1-minute

Rest 1-minute and repeat (complete 3 circuits)

Workout Notes

- Perform each exercise for 1-minute. Perform as many repetitions as possible during each minute. You will move from one exercise to the next without rest. You will rest 1-minute between circuits.
- Exercise 3 is a bodyweight lunge. You will not use dumbbells.

If you do not have a sledgehammer, you could perform the workout below:

Workout #2

1. Sandbag Shouldering × 1-minute
2. Bodyweight Squats × 1-minute
3. Sandbag Loading × 1-minute
4. Pushups × 1-minute
5. Sandbag Carry × 1-minute

Rest 1-minute and repeat (complete 3 circuits)

These 5-minute circuits are extremely demanding. You will never outgrow the routines. As your condition improves, you can increase the weight of the sandbag.

Do you have any workout ideas for a day when time is limited?

Many of the routines from this manual are brief. For example, the Warrior Challenges will require approximately 20-minutes of your time. If you look hard enough, you can find 20-minutes to spare. Stop making excuses!

As for other ideas, Tabata intervals are brief and effective. Density training also falls into this category.

Another useful routine includes:

- Burpees x 100 repetitions

How long will it take you to perform 100 burpees? Several members on the RossBoxing.com message board dubbed this routine the *Burpee Challenge*.

Will this program lead to overtraining?

Overtraining is a subject that is misunderstood by many. Post workout soreness does not constitute overtraining. Soreness is likely to occur after introducing a new exercise. The body is not accustomed to the stimulus, therefore responds with soreness. Overtraining results from an imbalance between stress and adaptability of the body. Essentially, when you increase intensity too much, too soon, and too often, you will run the risk of overtraining.

Clearly, these factors are unique to the individual. For example, an experienced marathon runner could obviously endure much more voluminous running than the casual fitness enthusiast. A competitive Olympic weightlifter can obviously

handle more near-maximal lifts than a novice lifter. Does this mean that Olympic weightlifting and distance running leads to overtraining?

Not necessarily!

Surely, these activities *could* lead to overtraining, but there are no set rules. The only rule is that overtraining is unique to the individual. It depends largely on your work capacity and training experience.

Overtraining is commonly classified as either A-overtraining (Addisonic) or B-overtraining (Basedowic). A-overtraining is more difficult to detect, and is associated with diminished activity of the adrenal glands. This form of overtraining may affect older athletes. Symptoms include an unusually low resting pulse rate, stagnation, deteriorating performance, and a sustained diastolic blood pressure increase of over 100mm Hg (Siff, 2003a).

B-overtraining is more common and easily detected, associated with thyroid hyperactivity. Common symptoms include fatigue, irritability, elevated blood pressure, reduced appetite, weight loss, and poor motivation.

Overtraining can be avoided by carefully planning workout intensity and volume, making time for back-off periods and regular GPP sessions. Work capacity must be developed, maintained, and improved. Proper nutrition, sleep, and supplementation are also essential to avoid overtraining. As training intensity increases, your need for food and sleep will also increase.

How much sleep do I need each night?

The National Sleep Foundation has stated that sleep disorders will cost the American population over \$100 billion per year in lost productivity, medical expenses, sick leave, and property and environmental damage.

As an athlete, you must make time for sleep. You should view each night's sleep as an opportunity to recharge your battery. Without enough sleep, your battery will run out of juice. Sleep is necessary for recovery and restoration. If you do not find time for sleep, you are limiting your potential in the gym. You will lack energy and never recover from intense training sessions. Find time for 8 hours of sleep each night.

What supplements should I take with this program?

For starters, I recommend a quality multi-vitamin and mineral supplement. Next, before you worry about supplementing your diet, you should focus on

cleaning your diet. Stick with quality (natural) foods and plenty of water. Stay away from processed items (ex. white flour products). Instead, choose foods such as lean meats, fish, fruits, vegetables, eggs, nuts, whole-wheat grains, and oatmeal.

In addition, I recommend eating several small meals throughout the day. While many believe this nutritional style is new, it has been around for years. Medvedyev recommended that Russian Olympic weightlifters eat 5 to 6 times per day during heavy training periods.

If you do choose to supplement your nutritional plan, spend some time researching potential products. Many online supplement businesses provide customer reviews of each product. Spend some time reading the reviews. Do not throw away your hard earned money without adequately researching the claims of the supplement manufacturer.

There is no substitute for due diligence.

Ross, I am not a competitive athlete, nor do I plan to be. Can I use this program if I am just training for general fitness?

First, never classify your objective as “just training” for anything. Using this phrase implies that what you are training for is not as important as what a competitive athlete is training for. This is not true.

You do not need to be a competitive athlete to maximize the potential of your body. The infinite intensity protocol is ideal for the non-competitive population. The workouts are brief, yet effective. You can maximize fitness, without wasting away the entire day.

Can I run more often? I am used to running 4 or more days per week.

Due to the intense nature of the Warrior Challenges and interval workouts, you should not need additional roadwork sessions. If you wish to add an aerobic running session, you can run on Day 5 (rest day).

I simply caution you against too much roadwork. Many fighters make the mistake of running too much. Consequently, their legs are always flat in the gym. Do not leave all of your strength on the road.

If you wish to increase running frequency, consider reducing the volume of other conditioning drills (ex. Warrior Challenges).

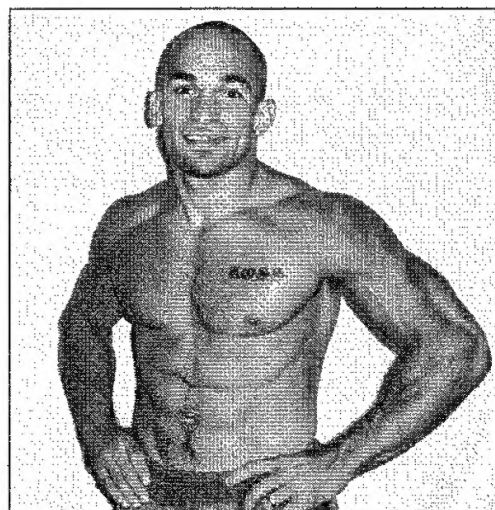
FINAL WORD

"It is not the critic who counts, not the man who points out how the strong man stumbles, or where the doer of deeds could have done them better. The credit belongs to the man in the arena, whose face is marred by dust and sweat and blood, who strives valiantly...who knows the great enthusiasms, the great devotions, who spends himself in a worthy cause, who at the best knows in the end the triumph of high achievement, and who at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who have never known neither victory nor defeat."

- Teddy Roosevelt

Perhaps the most valuable lesson to take from this book is that a silver bullet does not exist. The *one-size-fits-all* approach to fitness does not work. I can point you in the right direction and teach you many valuable concepts. At some point however, you must make this program your own. You must make adjustments and not be afraid to think outside the box.

The human body is the most amazing system in the world. The potential of the body is largely unknown. Most people will never tap into even a fraction of their potential.



Do not make this mistake. Life is one big opportunity. There are no rewind buttons in the real world. You may be able to rewind your cassette player, but you cannot rewind your life. If there is something you wish to achieve, you owe it to yourself to bust your ass until your dreams become a reality.

Never settle for anything less than your absolute best. This world is comprised of action takers and action fakers. Unfortunately, the action fakers are the majority.

It is about time that we employed a change of the guards.

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